MDX-C6500X

SERVICE MANUAL

US Model
Canadian Model
E Model

• The tuner and MD sections have no adjustments.

Model Name Using Similar Mechanism	NEW
Mini Disc Mechanism Type	MG-164NZ-138
Optical Pick-up Name	KMS-241C/J1NP

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US Model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
19 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

Other Specifications

MD player section

Signal-to-noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Tuner section

FM

Tuning range	US, Canadian model: 87.5 – 107.9 MHz E model: FM tuning interval: 50 kHz/200 kHz switchable 87.5 – 108 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	66 dB (stereo), 72 dB (mono)
Harmonic distortion at 1 kHz	0.6% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

AM

Tuning range	US, Canadian model: 530 – 1,710 kHz E model: AM tuning interval: 9 kHz/10 kHz switchable 531 – 1,602 kHz (at 9 kHz step) 530 – 1,710 kHz (at 10 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	30 µV

– Continued on next page –

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FM/AM MINIDISC PLAYER

MICROFILM

SONY®

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	50 W × 4 (at 4 ohms)

General

Outputs	Audio outputs Power antenna relay control lead Power amplifier control lead Telephone ATT control lead
Tone controls	Bass ±9 dB at 100 Hz Treble ±9 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 183 mm (7 1/8 × 2 × 7 1/4 in.) (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 162 mm (7 1/4 × 2 1/8 × 6 1/2 in.) (w/h/d)
Mass	Approx. 1.2 kg (2 lb. 10 oz.)
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

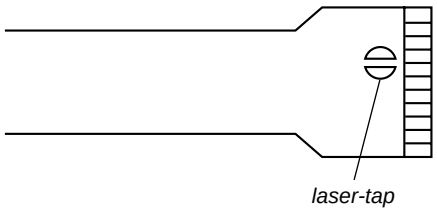
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

Never look into the laser diode emission from right avove when checking it for adustment. It is feared that you will lose your sight.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KMS-241C/J1NP)

The laser diode in the optical pick-up block may suffer electrostatic break-down easily. When handling it, perform soldering bridge to the laser-tap on the flexible board. Also perform m easures against electrostatic break-down sufficiently before the operation. The flexible board is easily damaged and should be handled with care.



OPTICAL PICK-UP FLEXIBLE BOARD

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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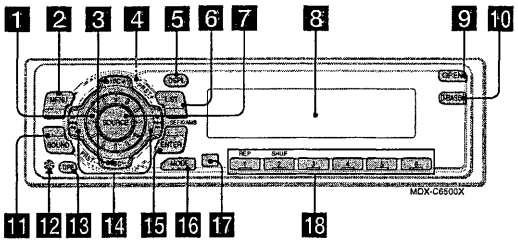
SECTION 1
GENERAL

This section is extracted from
US, Canadian model's instruction manual.

Location of controls



Refer to the pages listed for details.

1 **Volume control dial**

2 **MENU button 8, 10, 12, 13, 14, 15, 16, 17, 21, 22, 24**

3 **DISC/PRST +/– (cursor up/down) buttons 8, 10, 12, 13, 14, 15, 16, 17, 21, 22, 24**
During CD/MD playback:
Disc change 11, 13
During radio reception:
Preset stations select 16, 18
During TV reception:
Band select 22

4 **⏏ (eject) button (located on the front side of the unit behind the front panel) 9**

5 **DSPL (display mode change) button 9, 10, 12, 17**

6 **LIST button 12, 17**
List-up 13, 18, 23

7 **SOURCE (TUNER/CD/MD/TV) button 8, 9, 10, 13, 15, 16, 22, 24**

8 **Display window**

9 **OPEN button 7, 9, 25**

10 **D-BASS button 21**

11 **SOUND button 20**

12 **Reset button (located on the front side of the unit behind the front panel) 7**

13 **OFF button* 7, 8, 9**

14 **SEEK/AMS –/+ (cursor left/right) buttons 8, 10, 12, 14, 16, 17, 20, 21, 24**
Automatic Music Sensor 10, 14
Manual Search 10
Seek 15, 16, 22

15 **ENTER button 8, 10, 12, 13, 14, 15, 16, 17, 18, 21, 22, 24**

16 **MODE button**
During CD or MD playback:
CD/MD unit select 9, 13
During radio reception:
BAND select 15, 16
During TV reception:
Unit select 22

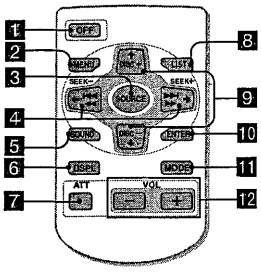
17 **Receptor for the card remote commander**

18 **Number buttons**
During radio reception:
Preset number select 15, 16
During CD/MD playback:
① REP 11
② SHUF 11
During TV reception:
Preset number select 22

*** Warning when installing in a car without ACC (accessory) position on the ignition key switch**
Be sure to press (OFF) on the unit for two seconds to turn off the clock display after turning off the engine.
When you press (OFF) only momentarily, the clock display does not turn off and this causes battery wear.

Location of controls

Card remote commander RM-X91

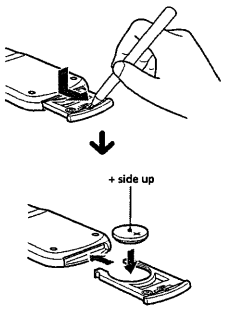


The corresponding buttons of the card remote commander control the same functions as those on this unit.

1 **OFF button**
2 **MENU button**
3 **SOURCE button**
4 **SEEK/AMS buttons**
5 **SOUND button**
6 **DSPL button**
7 **ATT button**
8 **LIST button**
9 **DISC/PRST buttons**
10 **ENTER button**
11 **MODE button**
12 **VOL buttons**

Replacing the lithium battery

When the battery becomes weak, the range of the card remote commander becomes shorter. Replace the battery with a new CR2025 lithium battery.



Notes on lithium battery

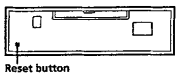
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.

WARNING
Battery may explode if mistreated.
Do not recharge, disassemble, or dispose of in fire.

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Remove the front panel and press the reset button with a pointed object, such as a ball-point pen.



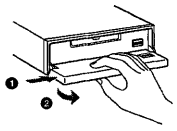
Note
Pressing the reset button will erase the clock setting and some memorized functions such as the station memo.

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

1 Press (OFF).

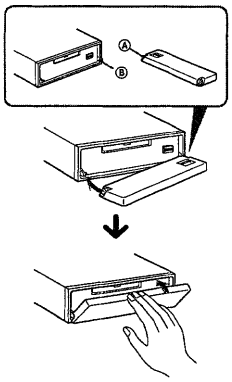
2 Press (OPEN), then slide the front panel to the right side, and pull out the left side of the front panel.



Notes
- *Do not put anything on the inner surface of the front panel.*
- *Be sure not to drop the panel when detaching it from the unit.*
- *If you detach the panel while the unit is still turned on, the power will turn off automatically to prevent the speakers from being damaged.*
- *When carrying the front panel with you, use the supplied front panel case.*

Attaching the front panel

Place the hole Ⓐ in the front panel onto the spindle Ⓑ on the unit as illustrated, then push the left side in.



Notes
- *Be careful not to attach the front panel upside down.*
- *Do not press the front panel too hard against the unit when attaching it.*
- *Do not press too hard or put excessive pressure on the display window of the front panel.*
- *Do not expose the front panel to direct sunlight or heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight or where there may be a considerable rise in temperature.*

Caution alarm

If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds.
If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.

Turning the unit on/off

Turning on the unit

Press (SOURCE) or insert an MD in the unit.
For details on operation, refer to page 9 (MD/CD) and page 15 (radio).

Turning off the unit

Press (OFF) to stop MD/CD playback or FM/AM reception (the key illumination and display remain on).
Press (OFF) for two seconds to completely turn off the unit.

Note
If your car has no ACC position on the ignition key switch, be sure to turn the unit off by pressing (OFF) for two seconds to avoid car battery wear.

How to use the menu

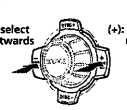
This unit is operated by selecting items from a menu.
To select, first enter the menu mode and choose up/down ((+)/(–) of (DISC/PRST)), or choose left/right ((–)/(+) of (SEEK/AMS)).

(DISC/PRST)

(+): to select upwards

(–): to select downwards

(SEEK/AMS)



(–): to select leftwards

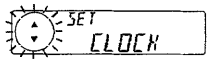
(+): to select rightwards

Setting the clock

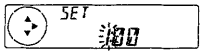
The clock uses a 12-hour digital indication.

Example: To set the clock to 10:08

1 Press (MENU), then press either side of (DISC/PRST) repeatedly until "CLOCK" appears.

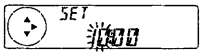


❶ Press (ENTER).



The hour indication flashes.

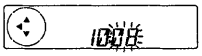
❷ Press either side of (DISC/PRST) to set the hour.



❸ Press the (+) side of (SEEK/AMS).

The minute indication flashes.

❹ Press either side of (DISC/PRST) to set the minute.



2 Press (ENTER).

The clock starts.

After the clock setting is completed, the display returns to normal play mode.

Note
In the initial setting, the clock indication appears while the unit is turned off.
When the D.INFO mode is set to ON, the time is always displayed (page 21).

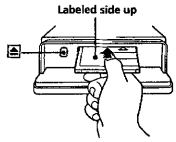
MD Player CD/MD Unit (optional)

In addition to playing an MD with this unit alone, you can also control external CD/MD units.
If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play a CD TEXT disc.

Listening to an MD

(with this unit only)

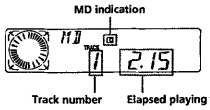
1 Press (OPEN) and insert the MD.



2 Close the front panel.
Playback starts automatically.

If an MD is already inserted, press (SOURCE) repeatedly until "MD" appears to start playback.

The title of the MD* and the track title will appear in the display window, then the playing time will appear.



** Only if these titles are prerecorded on the MD.*

When the last track on the MD is over

The track number indication returns to "1," and playback restarts from the first track of the MD.

To	Press
Stop playback	(OFF)
Eject the MD	(OPEN) then ⏏

Playing a CD or MD (with an optional CD/MD unit)

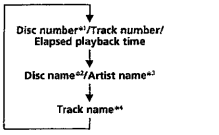
1 Press (SOURCE) repeatedly to select "CD" or "MD."

2 Press (MODE) until the desired unit appears.
CD/MD playback starts.

All the discs in the current CD/MD unit is played from the top.

Changing the display item

Each time you press (DSPL) during MD, CD, or CD TEXT disc playback, the item changes as follows:



**1 While an optional CD/MD unit is connected.*
**2 If you have not labeled the CD or CD TEXT disc ("Labeling a CD" on page 12), or if there is no disc name prerecorded on the MD, "DISC" and "NO NAME" appear in the display.*
**3 If you play a CD TEXT disc, the artist name appears in the display after the disc name. (Only for CD TEXT discs with the artist name.)*
**4 If the track name of a CD TEXT disc or MD is not prerecorded, "TRACK" and "NO NAME" appear in the display.*

After you select the desired item, the display will automatically change to the Motion Display mode after a few seconds.
In the Motion Display mode, all the items are scrolled in the display one by one in order.

Note
If you use personalized labels, they will always take priority over the original CD TEXT information when such information is displayed.

Tip
The Motion Display mode can be turned off. (See "Changing the sound and display settings" on page 20.)

Automatically scrolling a disc name — Auto Scroll

If the disc name, artist name, or track name on an MD or a CD TEXT disc exceeds eight characters and the Auto Scroll function is on, information automatically scrolls across the display as follows:
- *The disc name appears when the disc has changed (if the disc name is selected as the display item).*
- *The track name appears when the track has changed (if the track name is selected as the display item).*
- *The disc or track name appears depending on the setting when you press (SOURCE) to select an MD or CD TEXT disc.*

If you press (DSPL) to change the display item, the disc or track name of the MD or CD TEXT disc is scrolled automatically whether you set the function on or off.

1 During playback, press (MENU).

2 Press either side of (DISC/PRST) repeatedly until "A.SCRL-OFF" appears.

3 Press the (+) side of (SEEK/AMS) to select "A.SCRL-ON."

4 Press (ENTER).

To cancel Auto Scroll, select "A.SCRL-OFF" in step 3.

Note
For some CD TEXT discs with very many characters, the following cases may happen:
— Some of the characters are not displayed.
— Auto Scroll does not work.

Locating a specific track — Automatic Music Sensor (AMS)

During playback, press either side of (SEEK/AMS) momentarily for each track you want to skip.

Locating a specific point in a track — Manual Search

During playback, press and hold either side of (SEEK/AMS). Release when you have found the desired point.

Note
If "└└ └└" or "┐┌ ┐┌" appears in the display, you have reached the beginning or the end of the disc and you cannot go any further.

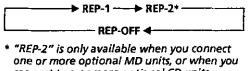
Locating a disc — Disc Selection

When an optional CD/MD unit is connected, press either side of (DISC/PRST) to select the desired disc.
The desired disc in the current optional CD/MD unit begins playback.

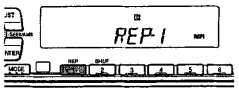
Playing tracks repeatedly — Repeat Play

The MD in the main unit will automatically repeat itself when it reaches the end. As repeat play, you can select:
- REP-1 – to repeat a track.
- REP-2 – to repeat a disc in the optional CD/MD unit.

During playback, press ① (REP) repeatedly until the desired setting appears in the display.



** "REP-2" is only available when you connect one or more optional MD units, or when you connect two or more optional CD units.*



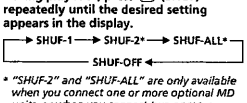
Repeat Play starts.

To return to normal play mode, select "REP-OFF."

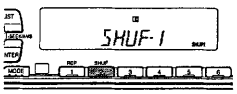
Playing tracks in random order — Shuffle Play

You can select:
- SHUF-1 – to play the tracks on the current disc in random order.
- SHUF-2 – to play the tracks in the current optional CD/MD unit in random order.
- SHUF-ALL – to play all the tracks in all the optional CD/MD units in random order.

During playback, press ② (SHUF) repeatedly until the desired setting appears in the display.



** "SHUF-2" and "SHUF-ALL" are only available when you connect one or more optional MD units, or when you connect two or more optional CD units.*



Shuffle Play starts.

To return to normal play mode, select "SHUF-OFF."

Labeling a CD — Disc Memo

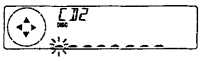
(For a CD unit with the custom file function)

You can label each disc with a personalized name. You can enter up to eight characters for a disc. If you label a CD, you can locate the disc by name (page 13) and select the specific tracks for playback (page 14).

1 Start playing the disc you want to label.

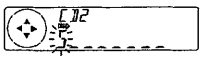
2 Press (MENU), then press either side of (DISC/PRST) repeatedly until "NAME EDIT" appears.

3 Press (ENTER).
Name edit mode



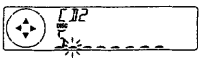
4 Enter the characters.

❶ Press the (+) side of (DISC/PRST) repeatedly to select the desired characters.
(A → B → C → ··· Z → 0 → 1 → 2 → ··· 9 → + → − → * → / → \ → > → < → . → _)



If you press the (–) side of (DISC/PRST) repeatedly, the characters will appear in reverse order.
If you want to put a blank space between characters, select "_" (under-bar).

❷ Press the (+) side of (SEEK/AMS) after locating the desired character.
The next character flashes.



If you press the (–) side of (SEEK/AMS), the previous character flashes.

❸ Repeat steps ❶ and ❷ to enter the entire name.

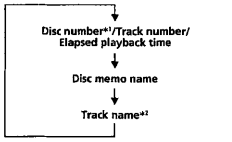
5 To return to normal CD play mode, press (ENTER).

Tips
- *To erase or correct a name, enter "_" (under-bar) for each character.*
- *There is another way to start labeling a CD. Press (LIST) for two seconds instead of steps 2 and 3. You can also complete the operation by pressing (LIST) for two seconds instead of step 5.*

Displaying the disc memo

Press (DSPL) during CD or CD TEXT disc playback.

Each time you press (DSPL) during CD or CD TEXT disc playback, the item changes as follows:



**1 While an optional CD unit is connected.*
**2 If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play a CD TEXT disc.*

Erasing the disc memo

1 Press (SOURCE) repeatedly to select "CD."

2 Press (MODE) repeatedly to select the CD unit.

3 Press (MENU), then press either side of (DISC/PRST) repeatedly until "NAME DEL" appears.

4 Press (ENTER).

5 Press either side of (DISC/PRST) repeatedly to select the disc name you want to erase.

6 Press (ENTER) for two seconds.
The name is erased.
Repeat steps 5 and 6 if you want to erase other names.

7 Press (MENU) twice.
The unit returns to normal CD play mode.

Note
When a personalized label is erased, the original CD TEXT information will appear in the display.

Locating a disc by name

— List-up (For a CD unit with the custom file function or an MD unit)

You can use this function for discs that have been assigned a custom name. For more information on disc memo names, refer to "Labeling a CD" (page 12).

1 Press (LIST).
The name assigned to the current disc appears in the display.

When you assign a disc memo name to a CD TEXT disc, it takes priority over the original CD TEXT information.

2 Press either side of (DISC/PRST) repeatedly until you find the desired disc.

3 Press (ENTER) to play the disc.

Notes
- *After a disc name has been displayed for five seconds, the display returns to normal play mode.*
- *The track names are not displayed during MD or CD TEXT disc playback.*
- *If there are no discs in the magazine, "NO DISC" appears in the display.*
- *If a disc has not been assigned a custom file, "********" appears in the display.*
- *Some letters cannot be displayed during MD or CD TEXT disc playback.*
- *If an optional TV system is connected, the disc memo name appears in the display of the TV system but not in the unit's display.*

Selecting specific tracks for playback

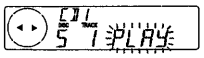
— Bank
(For a CD unit with the custom file function)

If you label the disc, you can set the unit to skip or play the tracks of your choice.

1 Start playing the disc you want to label.

2 Press (MENU), then press either side of (DISC/PRST) repeatedly until "BANK SEL" appears.

3 Press (ENTER).
Bank edit mode



4 Label the tracks.
❶ Press either side of (SEEK/AMS) repeatedly to select the track you want to label.
❷ Press (ENTER) repeatedly to select "PLAY."

5 Repeat step 4 to set "PLAY" or "SKIP" for all the tracks.

6 Press (MENU) twice.
The unit returns to normal CD play mode.

Notes
- *You can set "PLAY" and "SKIP" for up to 24 tracks.*
- *You cannot set "SKIP" for all the tracks on a CD.*

Playing specific tracks only

You can select:
- "BANK-ON" — to play the tracks with the "PLAY" setting.
- "BANK-INV" (Inverse) — to play the tracks with the "SKIP" setting.

1 During playback, press (MENU), then press either side of (DISC/PRST) repeatedly until "BANK-ON," "BANK-INV," or "BANK-OFF" appears.

2 Press the (+) side of (SEEK/AMS) repeatedly until the desired setting appears.

BANK-ON → BANK-INV
BANK-OFF ←

3 Press (ENTER).
Playback starts from the track following the current one.

To return to normal play mode, select "BANK-OFF" in step 2.

Radio

Memorizing stations automatically

— Best Tuning Memory (BTM)

The unit selects the stations with the strongest signals and memorizes them in the order of their frequencies. You can store up to 6 stations on each band (FM1, FM2, FM3, AM1, and AM2).

Caution
When tuning in stations while driving, use Best Tuning Memory to prevent accidents.

1 Press (SOURCE) repeatedly to select the tuner.
Each time you press (SOURCE), the source changes as follows:

Tuner → CD* → MD → TV* →

** If the corresponding optional equipment is not connected, these items will not appear.*

2 Press (MODE) repeatedly to select the band.
Each time you press (MODE), the band changes as follows:

→ FM1 → FM2 → FM3 →
← AM2 ← AM1 ←

3 Press (MENU), then press either side of (DISC/PRST) repeatedly until "BTM" appears.

4 Press (ENTER).
The unit stores stations in the order of their frequencies on the number buttons.
A beep sounds when the setting is stored.

Notes
- *The unit does not store stations with weak signals. If only a few stations can be received, some number buttons will retain their former setting.*
- *When a number is indicated in the display, the unit starts storing stations from the one currently displayed.*
- *If an MD is not in the unit, only the tuner band appears even if you press (SOURCE).*

Memorizing only the desired stations

You can preset up to 18 FM stations (6 each for FM1, FM2, and FM3), up to 12 AM stations (6 each for AM1 and AM2) in the order of your choice.

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band.

3 Press either side of (SEEK/AMS) to tune in the station that you want to store on the number button.

4 Press the desired number button (① to ⑥) for two seconds until "MEM" appears.
The number button indication appears in the display.

Note
If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band.

3 Press the number button (① to ⑥) on which the desired station is stored.

Tip
Press either side of (DISC/PRST) to receive the stations in the order they are stored in the memory (Preset Search Function).

If you cannot tune in a preset station

Press either side of (SEEK/AMS) to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Press either side of (SEEK/AMS) repeatedly until the desired station is received.

Note
If the automatic tuning stops too frequently, press (MENU), then press either side of (DISC/PRST) repeatedly until "LOCAL" (local seek mode) is displayed. Then press the (+) side of (SEEK/AMS) to select "LOCAL-ON." Press (ENTER). Only the stations with relatively strong signals will be tuned in.

Tips
- *When you select the "LOCAL-ON" setting, "L.SEEK" appears while the unit is searching for a station.*
- *If you know the frequency of the station you want to listen to, press and hold either side of (SEEK/AMS) until the desired frequency appears (manual tuning).*

If FM stereo reception is poor

— Monaural Mode

1 During radio reception, press (MENU), then press either side of (DISC/PRST) repeatedly until "MONO-OFF" appears.

2 Press the (+) side of (SEEK/AMS) until "MONO-ON" appears.
The sound improves, but becomes monaural ("ST" disappears).

3 Press (ENTER).

To return to normal mode, select "MONO-OFF" in step 2.

Automatical reception frequency adjustment

— IF AUTO function

If interference occurs, the "IF AUTO" function of this unit will automatically avoid noise and narrow the reception frequency. In such cases, some FM stereo broadcasts may become monaural. If you would like to hear such broadcasts in stereo, manually switch to the "WIDE" setting.

1 During radio reception, press (MENU), then press either side of (DISC/PRST) repeatedly until "IF AUTO" appears.

2 Press the (+) side of (SEEK/AMS) until "WIDE"" appears.

3 Press (ENTER).

Note
When you widen the frequency signal reception setting ("WIDE" mode), some interference may occur.

Storing the station names
— Station Memo

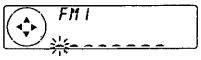
You can assign a name to each radio station and store it in memory. The name of the station currently tuned in appears in the display. You can assign a name of up to eight characters for a station.

Storing the station names

1 **Tune in a station whose name you want to store.**

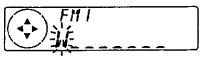
2 **Press (MENU), then press either side of (DISC/PRST) repeatedly until "NAME EDIT" appears.**

3 **Press (ENTER).**



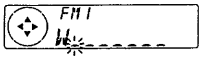
4 **Enter the characters.**

❶ Press the (+) side of (DISC/PRST) repeatedly to select the desired characters.
(A → B → C → ··· Z → 0 → 1 → 2 → ··· 9 → + → − → * → / → \ → > → < → . → _)



If you press the (–) side of (DISC/PRST) repeatedly, the characters appear in the reverse order.
If you want to put a blank space between characters, select "_" (under-bar).

❷ Press the (+) side of (SEEK/AMS) after locating the desired character.
The next character flashes.



If you press the (–) side of (SEEK/AMS), the previous character flashes.

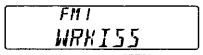
❸ Repeat steps ❶ and ❷ to enter the entire name.

5 **To return to the normal radio reception, press (ENTER).**

Tips
- *To erase or correct a name, enter "_" (under-bar) for each character.*
- *There is another way to start storing station names. Press (LIST) for two seconds instead of steps 2 and 3. You can also complete the operation by pressing (LIST) for two seconds instead of step 5.*

Displaying the station name

Press (DSPL) during radio reception.



Each time you press (DSPL), the item changes as follows:

Station name* → Frequency

** If the station name of a station is not stored, "NO NAME" appears in the display for one second.*

Erasing the station name

1 **Tune in a station whose name you want to erase.**

2 **Press (MENU), then press either side of (DISC/PRST) repeatedly until "NAME DEL" appears.**

3 **Press (ENTER).**

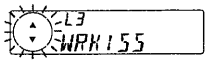
4 **Press (ENTER) for two seconds.**
The name is erased.
Repeat steps 1 through 4 if you want to erase other names.

5 **Press (MENU) twice.**
The unit returns to the normal radio reception mode.

Note
When you erase all of the station names, "NO NAME" appears in step 4.

Locating a station by name — List-up

1 **Press (LIST) momentarily.**
The name assigned to the station currently tuned appears in the display.



2 **Press either side of (DISC/PRST) repeatedly until you find the desired station.**
When no name is assigned to the selected station, the frequency appears in the display.

3 **Press (ENTER) to tune in the desired station.**

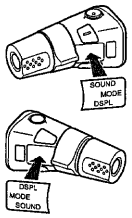
Notes
- *Once the station name or frequency has been displayed for five seconds, the display goes back to its normal mode.*
- *When you connect a TV tuner, the list-up indication will not appear in the display of the unit.*

Other Functions

You can also control the unit with a rotary commander.

Labeling the rotary commander

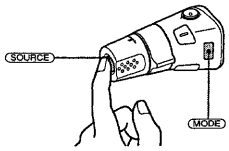
Depending on how you mount the rotary commander, attach the appropriate label as shown in the illustration below.



Using the rotary commander

The rotary commander works by pressing buttons and/or rotating controls.
You can also control an optional CD/MD unit with the rotary commander.

By pressing buttons (the SOURCE and MODE buttons)



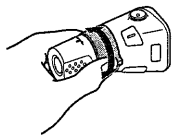
Each time you press (SOURCE), the source changes as follows:
Tuner → CD* → MD → TV*

** If the corresponding optional equipment is not connected, these items will not appear.*

Pressing (MODE) changes the operation in the following ways:
- **Tuner: FM1 → FM2 → FM3 → AM1 → AM2**
- **CD unit*: CD1 → CD2 → ...**
- **MD unit*: MD1 → MD2 → ...**
- **TV/Video*: TV1 → TV2 → AUX**

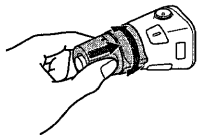
** If the corresponding optional equipment is not connected, these items will not appear.*

By rotating the control (the SEEK/AMS control)



Rotate the control momentarily and release it to:
- Locate a specific track on a disc. Rotate and hold the control until you locate the specific point in a track, then release it to start playback.
- Tune in stations automatically. Rotate and hold the control to find a specific station.

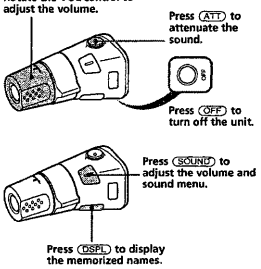
By pushing in and rotating the control (the PRESET/DISC control)



Push in and rotate the control to:
- Receive the stations memorized on the number buttons.
- Change the disc.

Other operations

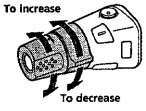
Rotate the VOL control to adjust the volume.


Press (ATT) to attenuate the sound.
Press (OFF) to turn off the unit.
Press (SOUND) to adjust the volume and sound menu.
Press (DSPL) to display the memorized names.

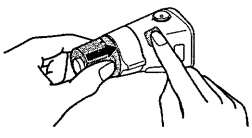
Tip
If your car has no ACC (accessory) position on the ignition key switch, be sure to press (OFF) for two seconds to turn off the clock indication after turning off the engine.

Changing the operative direction

The operative direction of controls is factory-set as shown below.



If you need to mount the rotary commander on the right hand side of the steering column, you can reverse the operative direction.



Press (SOUND) for two seconds while pushing the VOL control.

Tip
You can also change the operative direction of these controls with the unit (see "Changing the sound and display settings" on page 21).

Adjusting the sound characteristics

You can adjust the bass, treble, balance, and fader.
You can store the bass and treble levels independently for each source.

1 **Select the item you want to adjust by pressing (SOUND) repeatedly.**
Each time you press (SOUND), the item changes as follows:
BAS (bass) → TRE (treble) → BAL (left-right) → FAD (front-rear)

2 **Adjust the selected item by pressing either side of (SEEK/AMS).**
When adjusting with the rotary commander, press (SOUND) and rotate the VOL control.

Note
Adjust within three seconds after selecting the item.

Attenuating the sound

Press (ATT) on the rotary commander or card remote commander.
"ATT-ON" flashes momentarily.

To restore the previous volume level, press (ATT) again.

Tip
When the interface cable of a car telephone is connected to the ATT lead, the unit decreases the volume automatically when a telephone call comes in (Telephone ATT function).

Changing the sound and display settings

The following items can be set:

SET (setting)

- CLOCK (page 8)
- BEEP — to turn on or off the beeps.
- RM (Rotary Commander) — to change the operative direction of the controls of the rotary commander.
  - — Select "NORM" to use the rotary commander as the factory-set position.
  - — Select "REV" when you mount the rotary commander on the right side of the steering column.

DIS (display)

- D.INFO (Dual Information) — to display the clock and the play mode at the same time (ON).
- M.DSPL (Motion Display) — to turn the motion display on or off.
- A.SCRL (Auto Scroll) (page 10)

Note
If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be disabled.

1 Press (MENU).

2 **Press either side of (DISC/PRST) repeatedly until the desired item appears.**
Each time you press the (–) side of (DISC/PRST), the item changes as follows:

CLOCK → BEEP → RM → D.INFO → M.DSPL → A.SCRL*

* *When no CD or MD is playing, this item will not appear.*

Note
The displayed item will differ depending on the source.

Tip
You can easily switch among categories ("SET", "DIS", "PIM" (play mode), and "EDT" (edit mode)) by pressing either side of (DISC/PRST) for two seconds.

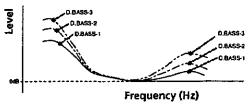
3 **Press the (+) side of (SEEK/AMS) to select the desired setting (Example: ON or OFF).**

4 **Press (ENTER).**
After the mode setting is completed, the display returns to normal play mode.

Boosting the bass sound

— D-bass

You can enjoy a clear and powerful bass sound.
The D-bass function boosts the low and high frequency signal with a sharper curve than conventional bass boost.
You can hear the bass line more clearly even while the vocal volume remains the same. You can emphasize and adjust the bass sound easily with the D-BASS button.



Adjusting the bass curve

Press (D-BASS) repeatedly until the desired bass level (1, 2, or 3) appears in the display.

To cancel, select "D.BASS-OFF."

Note
If the bass sound becomes distorted, select a less effective setting of "D.BASS" or adjust the volume.

TV/Video (optional)

You can connect an optional TV tuner and TV monitor to this unit.

Watching the TV

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Press either side of (DISC/PRST) repeatedly to select the desired TV band.**

Watching a video

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Press (MODE) repeatedly to select "AUX."**
Play the video.

Notes
- *The indication automatically switches to "VIDEO 1" soon after "AUX" is displayed.*
- *"VIDEO 2" appears if the VIDEO 2 terminal of the TV monitor is selected.*

Memorizing TV channels automatically

The unit selects the TV channels with the strongest signals and memorizes them in the order of their frequency.

Caution
When tuning in a station while driving, use Best Tuning Memory to prevent accidents.

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Press (MENU), then press either side of (DISC/PRST) until "AUTO MEM" appears.**

3 **Press (ENTER).**
The unit stores TV channels in the order of their frequencies on the number buttons.
A beep sounds when the setting is stored.

Notes
- *The unit does not store TV channels with weak signals. If only a few TV channels can be received, some number buttons will remain empty.*
- *When a preset number is indicated in the display, the unit starts storing TV channels from the one currently displayed.*

Memorizing only the desired TV channels

You can store up to 12 channels (6 each for TV1 and TV2) on the number buttons in the order of your choice.

1 **Press (SOURCE) repeatedly until "TV" appears.**

2 **Press either side of (SEEK/AMS) to tune in the TV channel you want to store on each number button.**

3 **Press and hold the desired number button (① to ⑥) until you hear a beep sound.**
The number button indication and "MEM" appear in the display.

Note
If you try to store another channel on the same number button, the previously stored channel will be erased.

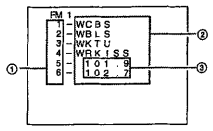
Storing the TV channel names

Follow the steps in "Storing the station names" (page 17).

Displaying the TV or radio station names

Press (LIST) during TV or radio reception.

Example: When receiving the FM1-band



① **Preset numbers**
② **Stored station names**
③ **Frequencies***

* *If the name of a station is not stored, the frequency of that station will be displayed instead.*

Notes
- *It may take some time before all indications appear in the display.*
- *The TV channel does not appear during list display.*
- *The contents of the preset memory cannot be listed when the unit is in simultaneous play mode (page 23).*

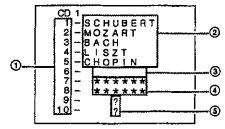
Turning off the display

During radio reception, press (LIST) again.
During TV reception, the list display on the TV monitor will automatically turn off after a few seconds.

Displaying the information stored on discs

Press (LIST) during CD/MD playback.

Example: When CD unit 1 is selected.



① **Disc numbers**
② **Titles stored as custom files**
③ **No disc is loaded*1**
④ **No stored titles*2**
⑤ **TOC information has not been identified yet*3**

*1 *A blank space displayed next to a disc number represents empty slots in the disc magazine.*
*2 *If a title is not registered in the custom file, "******" is displayed.*
*3 *If the disc information has not yet been read by the unit, "?" is displayed.*

Notes
- *It may take some time before all indications appear in the display.*
- *The TV channel does not appear during list display.*
- *The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode.*

Turning off the display

Press (LIST) again.

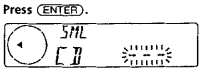
Watching the TV or video while listening to a CD or MD — Simultaneous Play

The simultaneous play function does not work while you are listening to the radio.

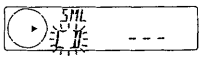
Continue to next page →

1 **Press (MENU), then press either side of (DISC/PRST) repeatedly until "SML" appears.**

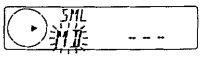
2 **Press (ENTER).**



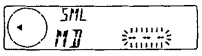
3 **Press the (–) side of (SEEK/AMS).**



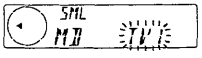
4 **Press (SOURCE) repeatedly to select CD or MD.**



5 **Press the (+) side of (SEEK/AMS).**



6 **Press (SOURCE) repeatedly to select a TV or video.**



7 **Press (ENTER).**
Simultaneous Play starts.

If you are already watching the TV or video and want to listen to a CD or MD as well, follow the same steps.

Returning to normal mode

To cancel the CD or MD, select "– – –" in step 3.

To cancel the TV or video, select "– – –" in step 5.

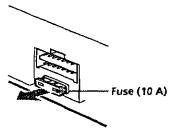
Note
If you press ⏏ (EJECT) on a CD/MD unit while the unit is in simultaneous play mode, Simultaneous Play is canceled.

Additional Information

Maintenance

Fuse replacement

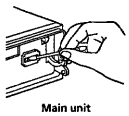
When replacing the fuse, be sure to use one matching the amperage rating stated on the original fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.



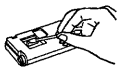
Warning
Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Cleaning the connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing (OPEN), then detach it and clean the connectors with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connectors may be damaged.



Main unit



Back of the front panel

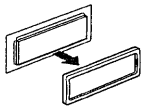
Notes

- *For safety, turn off the engine before cleaning the connectors, and remove the key from the ignition switch.*
- *Never touch the connectors directly with your fingers or with any metal device.*

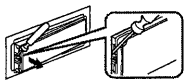
Dismounting the unit

1 **Press the clip inside the front cover with a thin screwdriver, and gently pry the front cover free.**

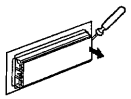
2 **Repeat step 1 on the left side.**
The front cover is removed.



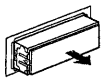
3 **Use a thin screwdriver to push in the clip on the left side of the unit, then pull out the left side of the unit until the catch clears the mounting.**



4 **Repeat step 3 on the right side.**



5 **Slide the unit out of the mounting.**



Connections

Cautions

- This unit is designed for negative earth 12 V DC operation only.
- Be careful not to pinch any wires between the screw and the body of the car, or this unit, or between any moving parts such as the seat railing, etc.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common earth surface.**
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in series with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual component's fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.
- The use of optical instruments with this product will increase eye hazard.

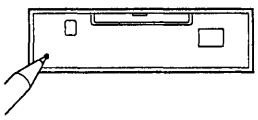
Warning when installing in a car without ACC (accessory) position on the ignition key switch

Be sure to press (OFF) on the unit for two seconds to turn off the clock display after turning off the engine.

When you press (OFF) only momentarily, the clock display does not turn off and this causes battery wear.

Reset button

When the installation and connections are completed, be sure to press the reset button with a ball-point pen, etc.



Connexions

Précautions

- Cet appareil est conçu pour fonctionner sur tension continue de 12 V avec masse négative.
- Veillez à ne coincer aucun fil entre la vis et la carrosserie ou cet appareil ou aucun élément mobile comme les glissières du siège, etc.
- Brancher les fils d'entrée d'alimentation **jaune** et **rouge** seulement après avoir terminé tous les autres branchements.
- Veiller à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoires.
- **Rassembler tous les fils de terre en un point de masse commun.**
- Brancher le câble jaune à un circuit libre de la voiture dont la capacité nominale est supérieure à la capacité du fusible de l'appareil. Si vous branchez cet appareil en série avec d'autres composants stéréo, le circuit de la voiture auxquels ils sont raccordés doit afficher une capacité nominale supérieure à la somme des capacités individuelles de chaque composant. S'il n'y a pas de circuits de voiture affichant une capacité égale à la capacité du fusible de l'appareil, brancher l'appareil directement à la batterie. Si aucun circuit de voiture n'est disponible pour connecter cet appareil, brancher l'appareil à un circuit de voiture supérieur à la capacité du fusible de l'appareil de telle sorte que si l'appareil grille son fusible, aucun autre circuit ne soit coupé.

Avertissement en cas d'installation dans une voiture dont le contact ne comporte pas de position ACC (accessoires)

Appuyez sur la touche (OFF) de l'appareil pendant deux secondes pour désactiver l'affichage de l'horloge après avoir coupé le moteur.

Lorsque vous appuyez brièvement sur (OFF), l'affichage de l'horloge ne s'éteint pas et cela provoque une usure de la batterie.

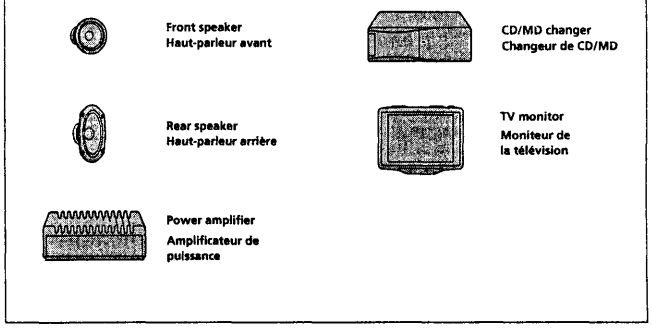
Touche de réinitialisation

Quand l'installation et les connexions sont terminées, appuyer sur la touche de réinitialisation avec un stylo bille ou un objet pointu.

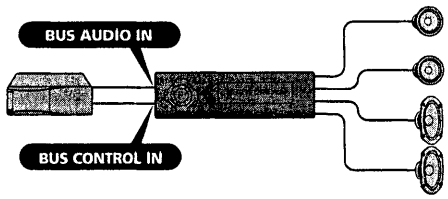
Connection diagram / Schéma de connexion

Equipment used in illustrations (not supplied)

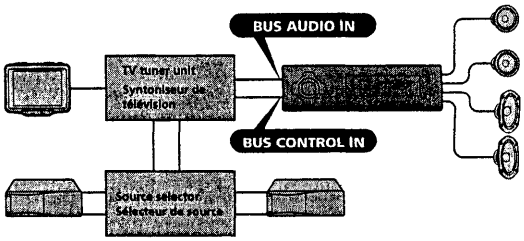
Appareils utilisés dans les illustrations (non fournis)



I



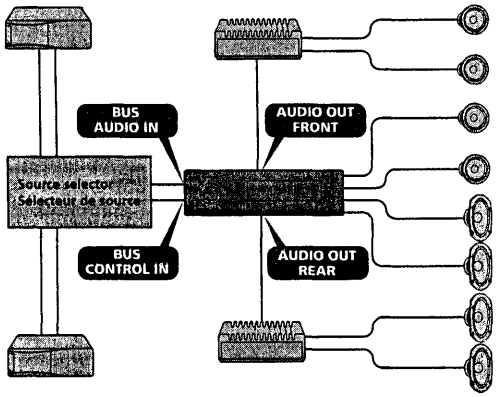
II



Note
For connecting two or more CD/MD changers, the source selector XA-C30 (optional) is necessary.

Remarque
Dans le cas du raccordement de deux changeurs de CD/MD ou plus, le sélecteur de source XA-C30 (option) est indispensable.

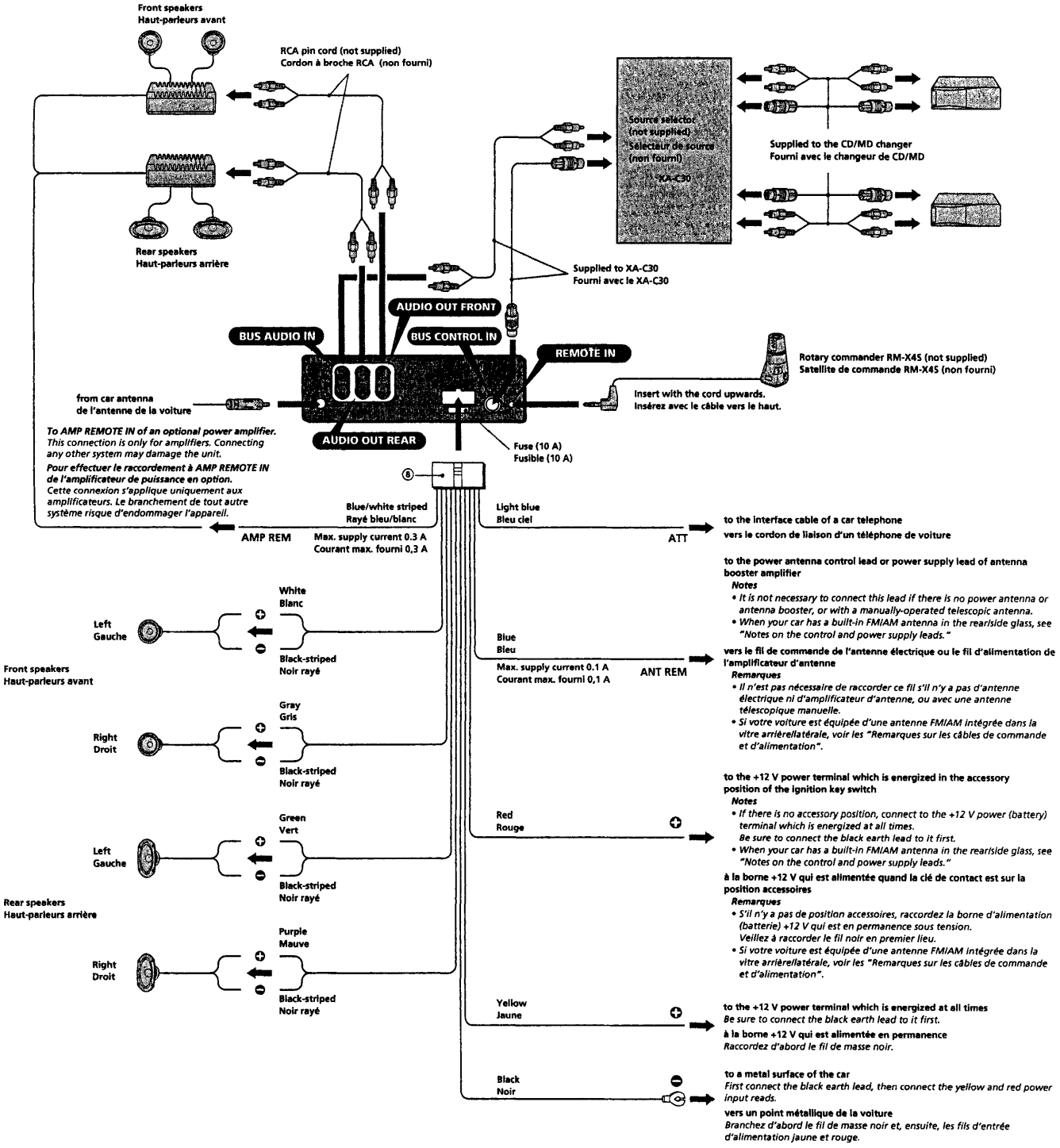
III



Notes
- *For connecting two or more CD/MD changers, the source selector XA-C30 (optional) is necessary.*
- *Be sure to connect the earth cord before connecting the amplifier.*
- *If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.*

Remarques
- *Dans le cas du raccordement de deux changeurs de CD/MD ou plus, le sélecteur de source XA-C30 (option) est indispensable.*
- *Raccordez d'abord le fil de masse avant de connecter l'amplificateur.*
- *Si vous raccordez un amplificateur de puissance optionnel et que vous n'utilisez pas l'amplificateur intégré, le bip sonore est désactivé.*

Connection example
Exemple de connection


Front speakers
Haut-parleurs avant
RCA pin cord (not supplied)
Cordon à broche RCA (non fourni)
Source selector (not supplied)
Sélecteur de source (non fourni)
XA-C30
Supplied to the CD/MD changer
Fourni avec le changeur de CD/MD
Rear speakers
Haut-parleurs arrière
Supplied to XA-C30
Fourni avec le XA-C30
AUDIO OUT FRONT
BUS AUDIO IN
BUS CONTROL IN
REMOTE IN
Rotary commander RM-X4S (not supplied)
Satellite de commande RM-X4S (non fourni)
from car antenna
de l'antenne de la voiture
Insert with the cord upwards.
Insérez avec le câble vers le haut.
To AMP REMOTE IN of an optional power amplifier.
This connection is only for amplifiers. Connecting any other system may damage the unit.
Pour effectuer le raccordement à AMP REMOTE IN de l'amplificateur de puissance en option.
Cette connexion s'applique uniquement aux amplificateurs. Le branchement de tout autre système risque d'endommager l'appareil.
AUDIO OUT REAR
Fuse (10 A)
Fusible (10 A)
Blue/white striped
Rayé bleu/blanc
AMP REM
Max. supply current 0.3 A
Courant max. fourni 0,3 A
Light blue
Bleu ciel
ATT
to the interface cable of a car telephone
vers le cordon de liaison d'un téléphone de voiture
to the power antenna control lead or power supply lead of antenna booster amplifier
Notes
• It is not necessary to connect this lead if there is no power antenna or antenna booster, or with a manually-operated telescopic antenna.
• When your car has a built-in FM/AM antenna in the rearside glass, see "Notes on the control and power supply leads."
White
Blanc
Left
Gauche
Black-striped
Noir rayé
Front speakers
Haut-parleurs avant
Blue
Bleu
Max. supply current 0.1 A
Courant max. fourni 0,1 A
ANT REM
vers le fil de commande de l'antenne électrique ou le fil d'alimentation de l'amplificateur d'antenne
Remarques
• Il n'est pas nécessaire de raccorder ce fil s'il n'y a pas d'antenne électrique ni d'amplificateur d'antenne, ou avec une antenne télescopique manuelle.
• Si votre voiture est équipée d'une antenne FM/AM intégrée dans la vitre arrière/latérale, voir les "Remarques sur les câbles de commande et d'alimentation".
Gray
Gris
Right
Droit
Black-striped
Noir rayé
to the +12 V power terminal which is energized in the accessory position of the ignition key switch
Notes
• If there is no accessory position, connect to the +12 V power (battery) terminal which is energized at all times.
Be sure to connect the black earth lead to it first.
• When your car has a built-in FM/AM antenna in the rearside glass, see "Notes on the control and power supply leads."
Green
Vert
Red
Rouge
Left
Gauche
Black-striped
Noir rayé
à la borne +12 V qui est alimentée quand la clé de contact est sur la position accessoires
Remarques
• S'il n'y a pas de position accessoires, raccordez la borne d'alimentation (batterie) +12 V qui est en permanence sous tension.
Veillez à raccorder le fil noir en premier lieu.
• Si votre voiture est équipée d'une antenne FM/AM intégrée dans la vitre arrière/latérale, voir les "Remarques sur les câbles de commande et d'alimentation".
Rear speakers
Haut-parleurs arrière
Purple
Mauve
Right
Droit
Black-striped
Noir rayé
Yellow
Jaune
to the +12 V power terminal which is energized at all times
Be sure to connect the black earth lead to it first.
à la borne +12 V qui est alimentée en permanence
Raccordez d'abord le fil de masse noir.
Black
Noir
to a metal surface of the car
First connect the black earth lead, then connect the yellow and red power input reads.
vers un point métallique de la voiture
Branchez d'abord le fil de masse noir et, ensuite, les fils d'entrée d'alimentation jaune et rouge.

Notes on the control and power supply leads
- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner.*
- *When your car has built-in FM/AM antenna in the rearside glass, it is necessary to connect the power antenna control lead (blue) or the accessory power input lead (red) to the power terminal of the existing antenna booster. For details, consult your dealer.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Remarques sur les câbles de commande et d'alimentation
- *Le fil de commande d'antenne (bleu) assure une alimentation de +12 V CC lorsque vous mettez le syntoniseur sous tension.*
- *Si votre voiture est équipée d'une antenne FM/AM intégrée dans la vitre arrière/latérale, il est nécessaire de raccorder le fil de commande de l'antenne électrique (bleu) ou le fil d'entrée d'alimentation des accessoires (rouge) de l'amplificateur d'antenne existant. Pour plus de détails, consultez votre revendeur.*
- *Une antenne électrique sans boîtier de relais ne peut être utilisée avec cet appareil.*

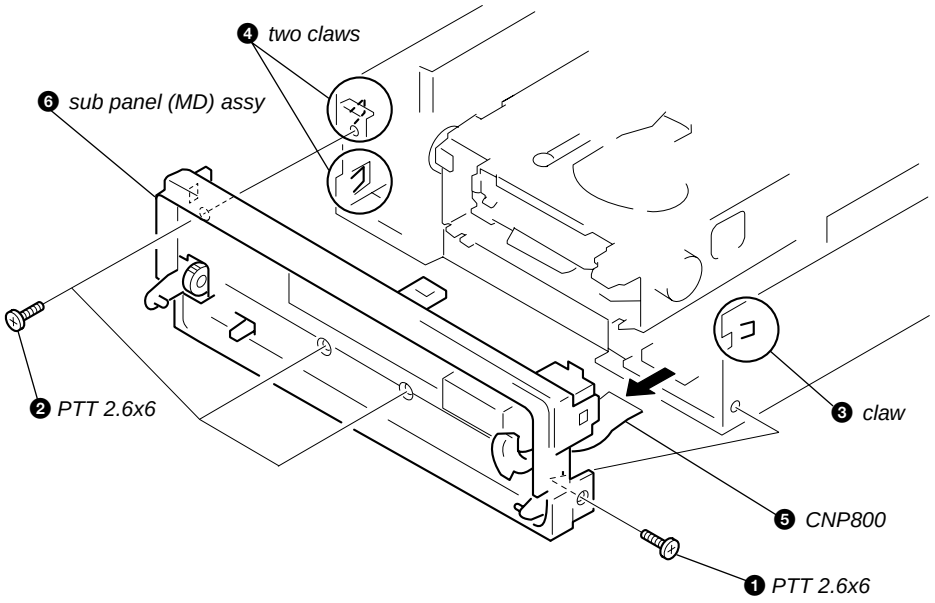
Connexion pour la conservation de la mémoire
Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur la connexion des haut-parleurs
- *Avant de raccorder les haut-parleurs, mettre l'appareil hors tension.*
- *Utiliser des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.*
- *Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.*
- *Ne pas tenter de raccorder les haut-parleurs en parallèle.*
- *Ne pas raccorder des haut-parleurs actifs (avec amplificateurs intégrés) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veiller à raccorder des haut-parleurs passifs à ces bornes.*

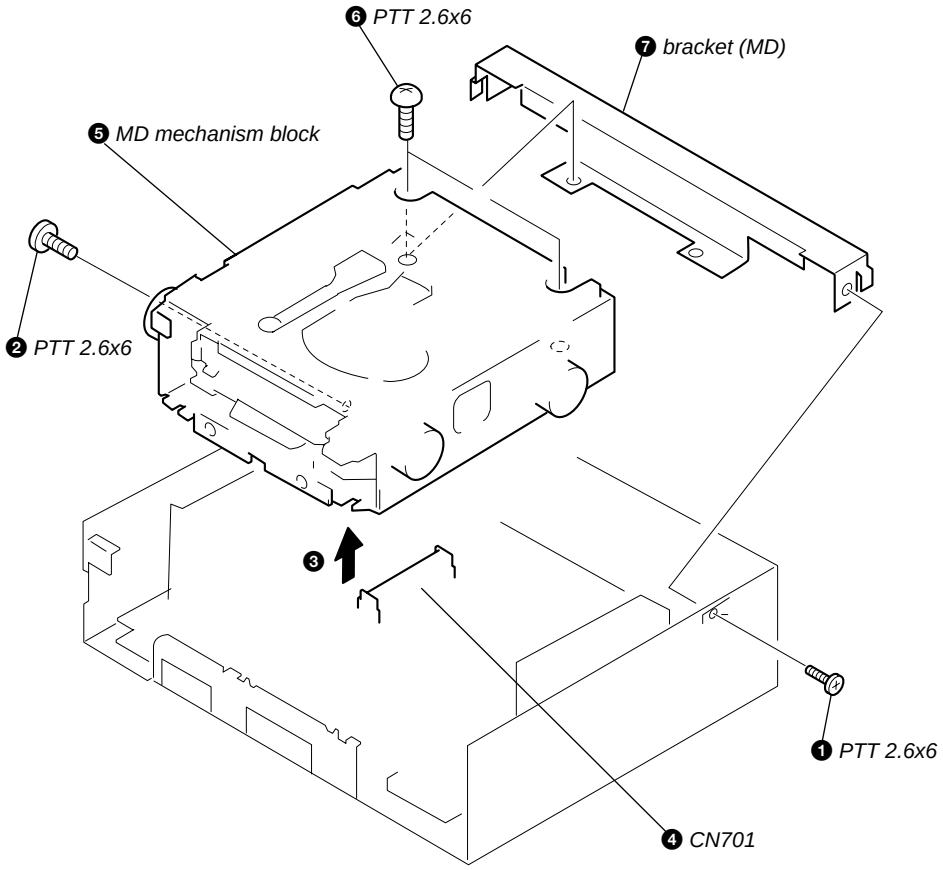
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

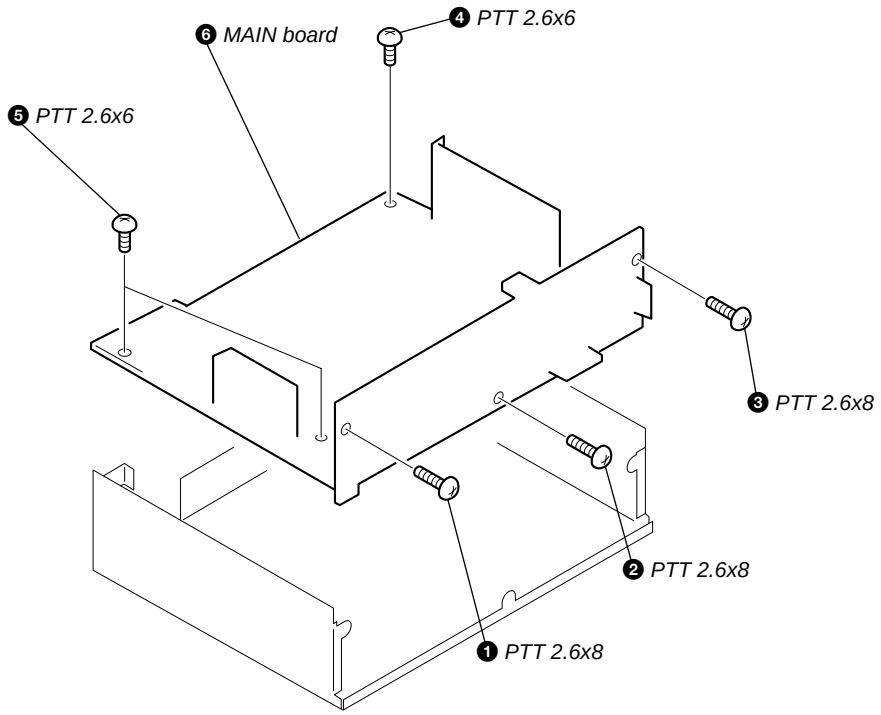
2-1. SUB PANEL (MD) ASSY



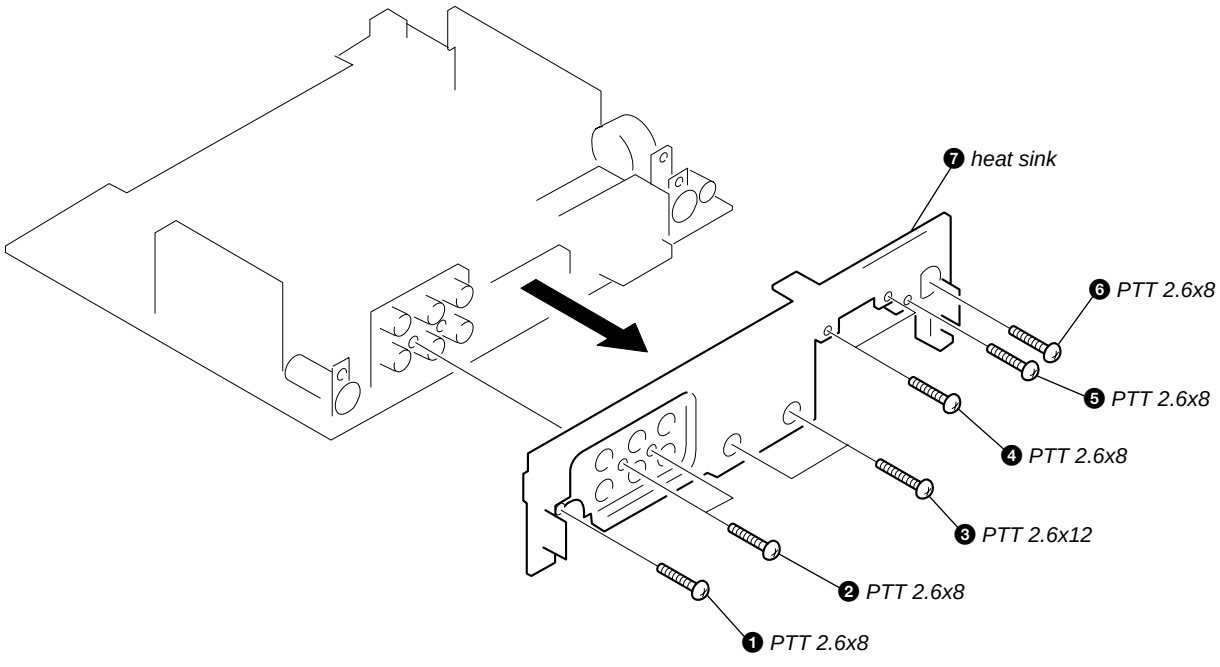
2-2. MD MECHANISM BLOCK



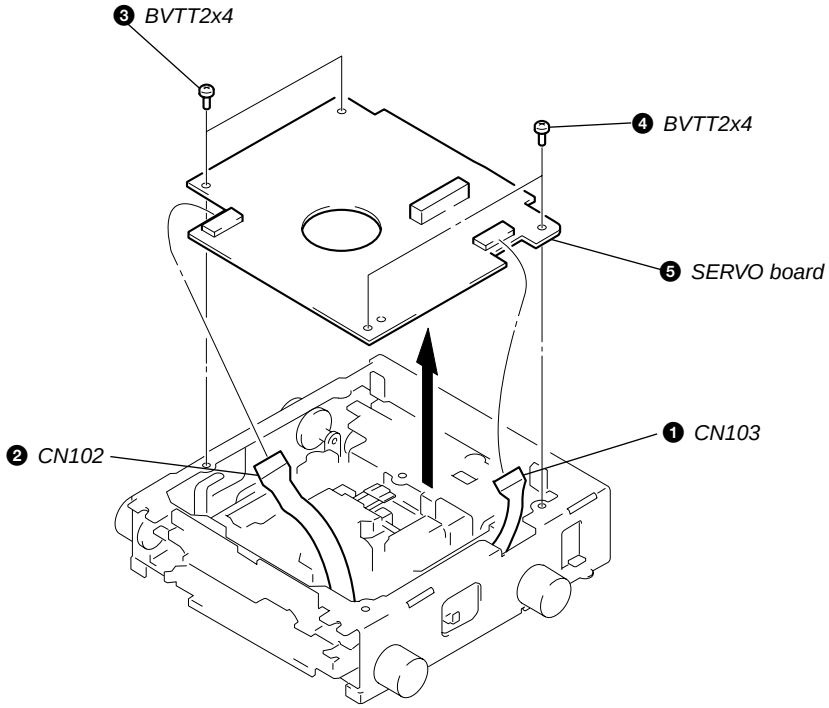
2-3. MAIN BOARD



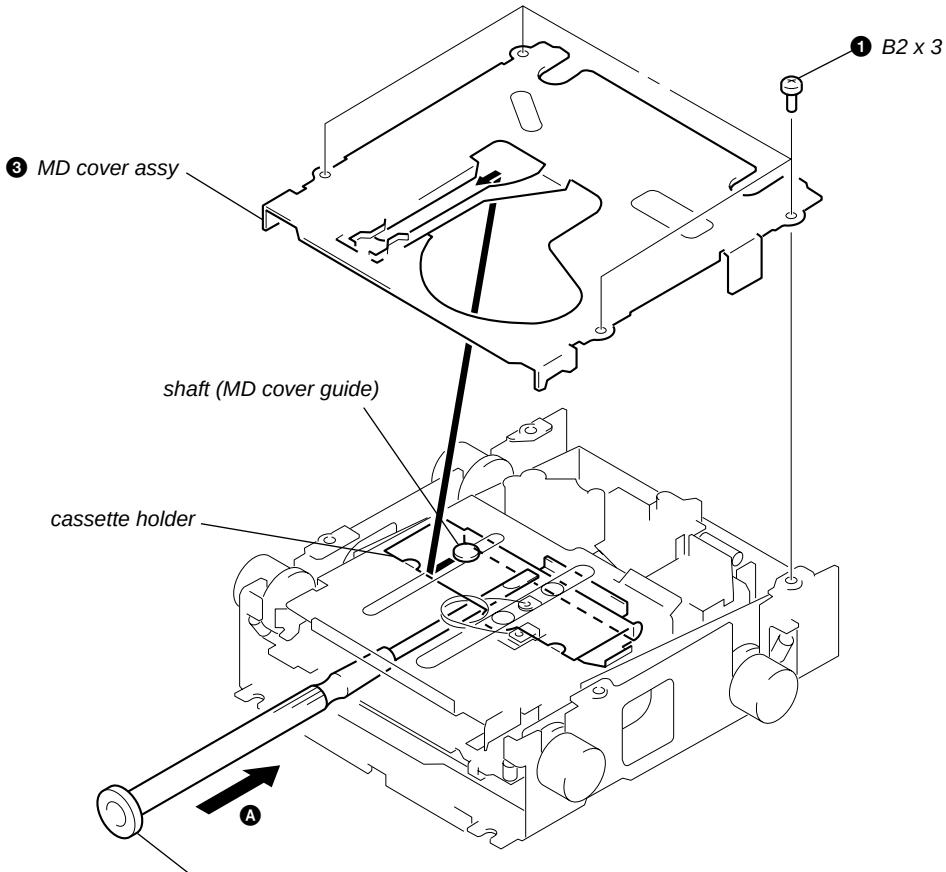
2-4. HEAT SINK



2-5. SERVO BOARD

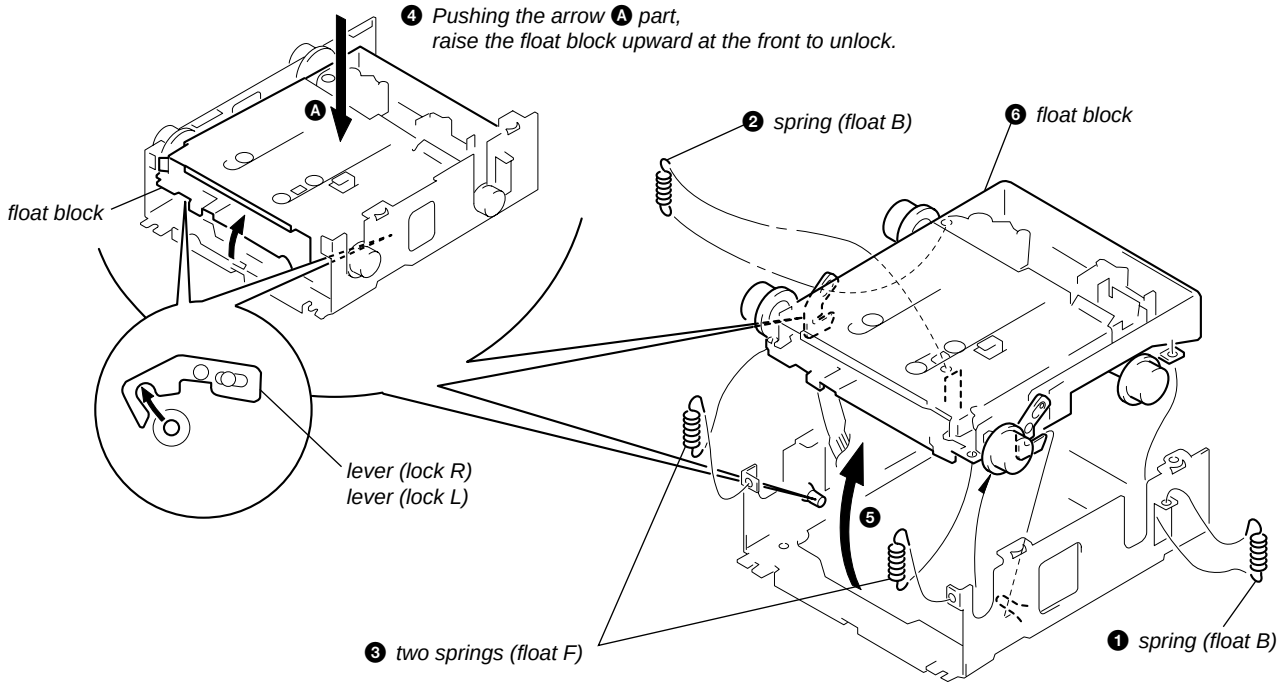


2-6. MD COVER ASSY

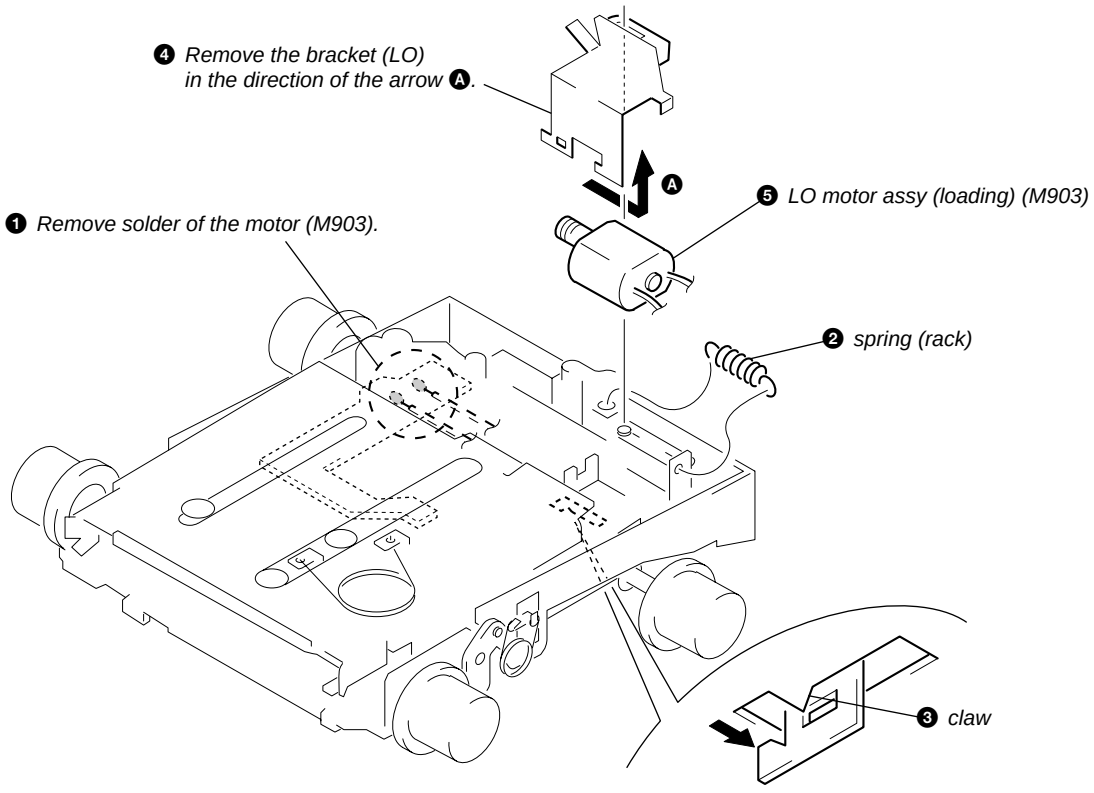


❷ *Pushing the cassette holder in the arrow Ⓐ direction with a screwdriver, disengage the shaft (MD cover guide) from the groove of MD cover ass'y.*
Note : Be careful not to damage the optical pick-up when pushing the cassette holder with a screwdriver.

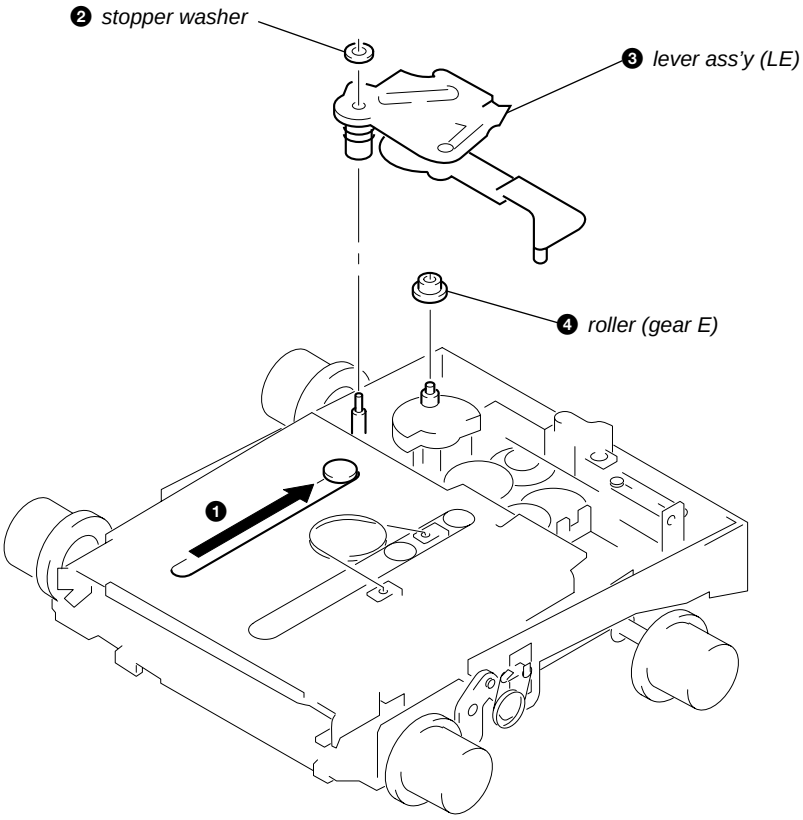
2-7. FLOAT BLOCK



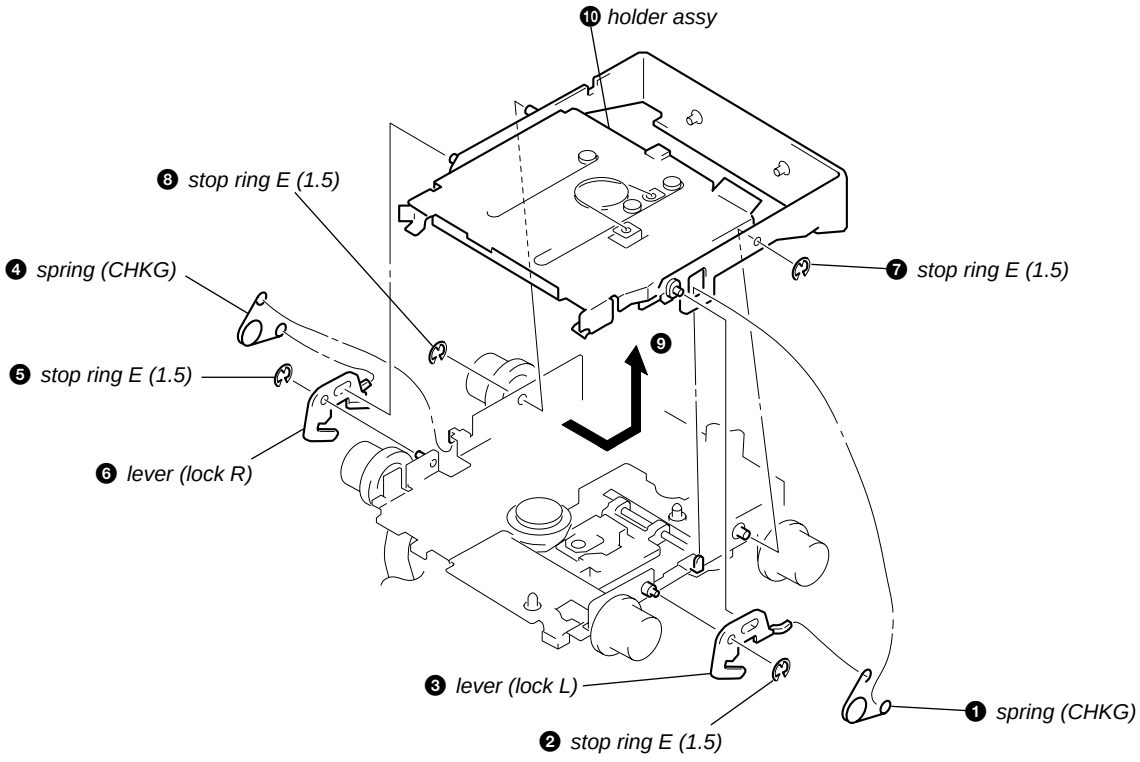
2-8. LO MOTOR ASSY (LOADING) (M903)


❹ Remove the bracket (LO)
in the direction of the arrow Ⓐ.
Ⓐ
❺ LO motor assy (loading) (M903)
❶ Remove solder of the motor (M903).
❷ spring (rack)
❸ claw

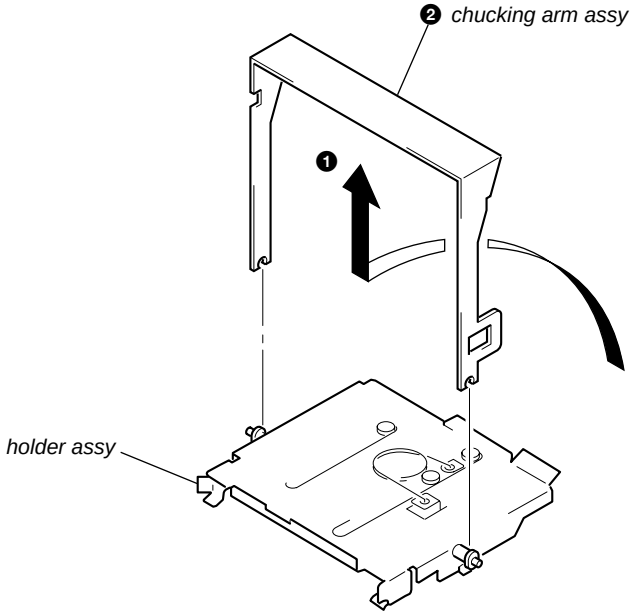
2-9. LEVER ASSY (LE)



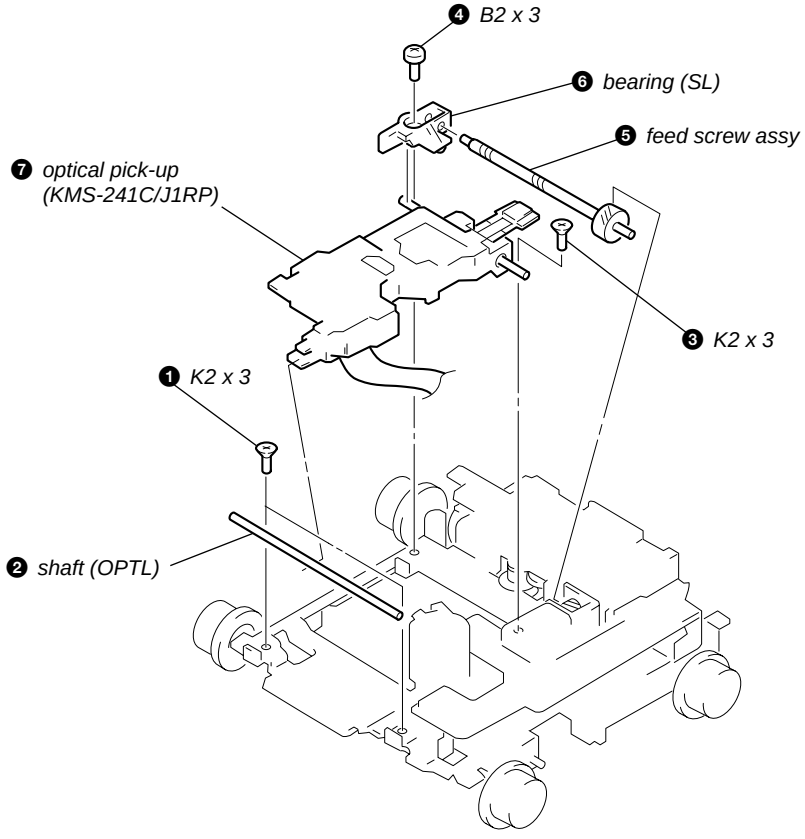
2-10. HOLDER ASSY



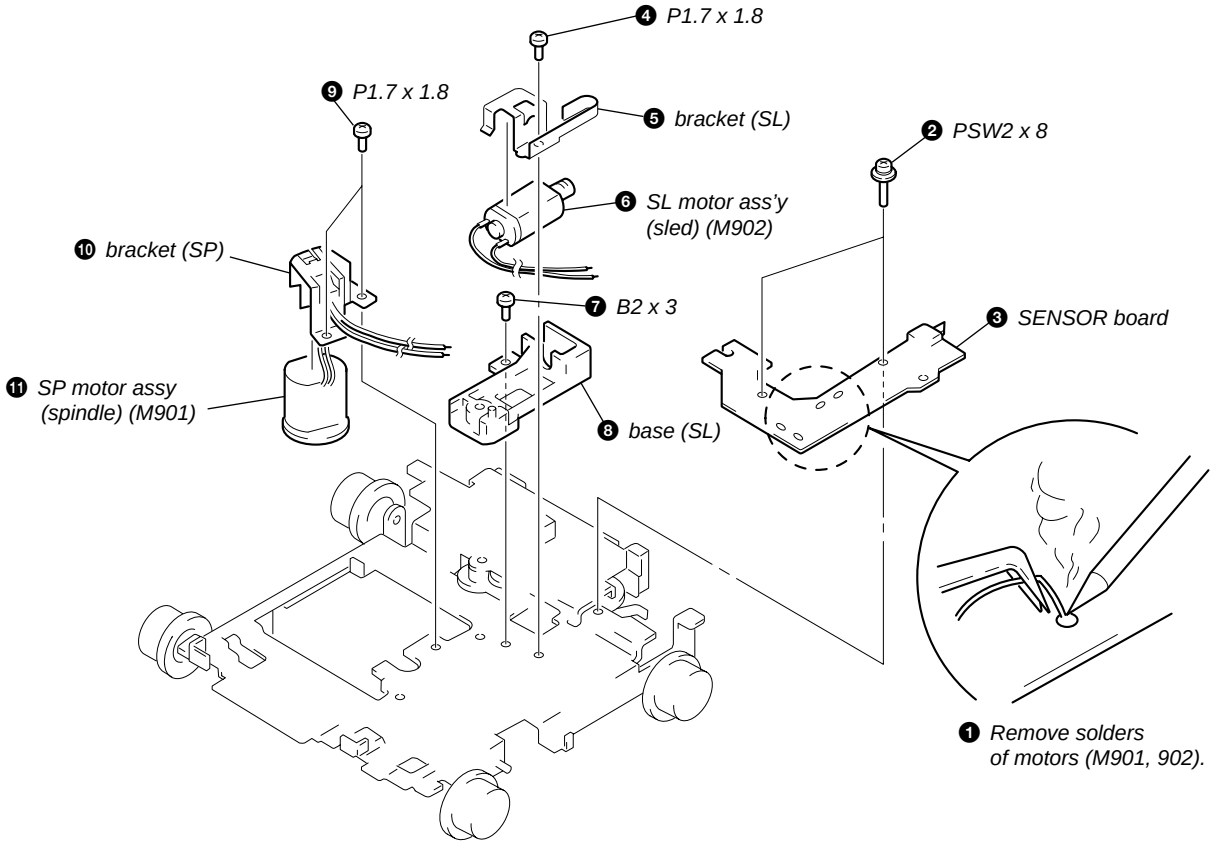
2-11. CHUCKING ARM ASSY



2-12. OPTICAL PICK-UP (KMS-241C/J1RP)



2-13. SL MOTOR ASSY (SLED) (M902)/SP MOTOR ASSY (SPINDLE) (M901)


❹ P1.7 x 1.8
❾ P1.7 x 1.8
❺ bracket (SL)
❷ PSW2 x 8
❻ SL motor ass'y (sled) (M902)
❿ bracket (SP)
❼ B2 x 3
❸ SENSOR board
⓫ SP motor assy (spindle) (M901)
❽ base (SL)
❶ Remove solders of motors (M901, 902).

SECTION 3
DIAGRAMS

3-1. IC PIN DESCRIPTIONS

• SERVO BOARD IC301 CXD2652AR
(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR, EFM/ACIRC ENCODER/DECODER, SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER, 2M BIT D-RAM)

Pin No.	Pin Name	I/O	Pin Description
1	MNT0	O	Focus OK signal output to the MD mechanism controller (IC501) "H" is output when focus is on ("L": NG)
2	MNT1	O	Track jump detection signal output to the MD mechanism controller (IC501)
3	MNT2	O	Busy monitor signal output to the MD mechanism controller (IC501)
4	MNT3	O	Spindle servo lock status monitor signal output to the MD mechanism controller (IC501)
5	SWDT	I	Writing serial data signal input from the MD mechanism controller (IC501)
6	SCLK	I	Serial data transfer clock signal input from the MD mechanism controller (IC501)
7	XLAT	I	Serial data latch pulse signal input from the MD mechanism controller (IC501)
8	SRDT	O (3)	Reading serial data signal output to the MD mechanism controller (IC501)
9	SENS	O (3)	Internal status (SENSE) output to the MD mechanism controller (IC501)
10	$\overline{\text{XRST}}$	I	Reset signal input from the MD mechanism controller (IC501) "L": reset
11	SQSY	O	Subcode Q sync (SCOR) output to the MD mechanism controller (IC501) "L" is output every 13.3 msec Almost all, "H" is output
12	DQSY	O	Digital In U-bit CD format subcode Q sync (SCOR) output terminal "L" is output every 13.3 msec Almost all, "H" is output Not used (open)
13	RECP	I	Laser power selection signal input terminal "L": playback mode, "H": recording mode (fixed at "L" in this set)
14	XINT	O	Interrupt status output to the MD mechanism controller (IC501)
15	TX	I	Recording data output enable signal input terminal Writing data transmission timing input (Also serves as the magnetic head on/off output) Not used (fixed at "L")
16	OSCI	I	System clock signal (512Fs=22.5792 MHz) input
17	OSCO	O	System clock signal (512Fs=22.5792 MHz) output terminal Not used (open)
18	XTSL	I	Input terminal for the system clock frequency setting "L": 45.1584 MHz, "H": 22.5792 MHz (fixed at "H" in this set)
19	RVDD	—	Power supply terminal (+3.3 V) (digital system)
20	RVSS	—	Ground terminal (digital system)
21	DIN	I	Digital audio signal input terminal when recording mode Not used (fixed at "L")
22	DOUT	O	Digital audio signal output terminal when playback mode Not used (open)
23	ADDT	I	Recording data input terminal Not used (fixed at "L")
24	DADT	O	Playback data output
25	LRCK	O	L/R sampling clock signal (44.1 kHz) output
26	XBCK	O	Bit clock signal (2.8224 MHz) output
27	FS256	O	Clock signal (11.2896 MHz) output terminal
28	DVDD	—	Power supply terminal (+3.3 V) (digital system)
29 – 32	A03 to A00	O	Address signal output to the D-RAM (IC307)
33	A10	O	Address signal output to the external D-RAM Not used (open)
34 – 38	A04 to A08	O	Address signal output to the D-RAM (IC307)
39	A11	O	Address signal output to the external D-RAM Not used (open)
40	DVSS	—	Ground terminal (digital system)
41	$\overline{\text{XOE}}$	O	Output enable signal output to the D-RAM (IC307) "L" active
42	$\overline{\text{XCAS}}$	O	Column address strobe signal output to the D-RAM (IC307) "L" active
43	A09	O	Address signal output to the D-RAM (IC307)
44	$\overline{\text{XRAS}}$	O	Row address strobe signal output to the D-RAM (IC307) "L" active
45	$\overline{\text{XWE}}$	O	Write enable signal output to the D-RAM (IC307) "L" active

Pin No.	Pin Name	I/O	Pin Description
46	D1	I/O	Two-way data bus with the D-RAM (IC307)
47	D0	I/O	
48	D2	I/O	
49	D3	I/O	
50	MVCI	I	Digital in PLL oscillation input from the external VCO Not used (fixed at “L”)
51	ASYO	O	Playback EFM full-swing output terminal
52	ASYI	I (A)	Playback EFM asymmetry comparator voltage input terminal
53	AVDD	—	Power supply terminal (+3.3 V) (analog system)
54	BIAS	I (A)	Playback EFM asymmetry circuit constant current input terminal
55	RFI	I (A)	Playback EFM RF signal input from the CXA2523AR (IC302)
56	AVSS	—	Ground terminal (analog system)
57	PDO	O (3)	Phase comparison output for clock playback analog PLL of the playback EFM Not used (open)
58	PCO	O (3)	Phase comparison output for master clock of the recording/playback EFM master PLL
59	FILI	I (A)	Filter input for master clock of the recording/playback master PLL
60	FILO	O (A)	Filter output for master clock of the recording/playback master PLL
61	CLTV	I (A)	Internal VCO control voltage input of the recording/playback master PLL
62	PEAK	I (A)	Light amount signal (RF/ABCD) peak hold input from the CXA2523AR (IC302)
63	BOTM	I (A)	Light amount signal (RF/ABCD) bottom hold input from the CXA2523AR (IC302)
64	ABCD	I (A)	Light amount signal (ABCD) input from the CXA2523AR (IC302)
65	FE	I (A)	Focus error signal input from the CXA2523AR (IC302)
66	AUX1	I (A)	Auxiliary signal (I3 signal/temperature signal) input terminal Not used (fixed at “H”)
67	VC	I (A)	Middle point voltage (+1.65 V) input from the CXA2523AR (IC302)
68	ADIO	O (A)	Monitor output of the A/D converter input signal Not used (open)
69	AVDD	—	Power supply terminal (+3.3 V) (analog system)
70	ADRT	I (A)	A/D converter operational range upper limit voltage input terminal (fixed at “H” in this set)
71	ADRB	I (A)	A/D converter operational range lower limit voltage input terminal (fixed at “L” in this set)
72	AVSS	—	Ground terminal (analog system)
73	SE	I (A)	Sled error signal input from the CXA2523AR (IC302)
74	TE	I (A)	Tracking error signal input from the CXA2523AR (IC302)
75	AUX2	I (A)	Auxiliary signal input terminal Light amount signal input from the CXA2523AR (IC302)
76	DCHG	I (A)	Connected to the +3.3 V power supply
77	APC	I (A)	Error signal input for the laser automatic power control Not used (fixed at “L”)
78	ADFG	I	ADIP duplex FM signal (22.05 kHz ± 1 kHz) input from the CXA2523AR (IC302)
79	F0CNT	O	Filter f0 control signal output terminal Not used (open)
80	XLRF	O	Serial data latch pulse signal output terminal Not used (open)
81	CKRF	O	Serial data transfer clock signal output terminal Not used (open)
82	DTRF	O	Writing serial data output terminal Not used (open)
83	APCREF	O	Control signal output to the reference voltage generator circuit for the laser automatic power control
84	LDDR	O	PWM signal output for the laser automatic power control Not used (open)
85	TRDR	O	Tracking servo drive PWM signal (–) output to the BH6511FS (IC303)
86	TFDR	O	Tracking servo drive PWM signal (+) output to the BH6511FS (IC303)
87	DVDD	—	Power supply terminal (+3.3 V) (digital system)
88	FFDR	O	Focus servo drive PWM signal (+) output to the BH6511FS (IC303)
89	FRDR	O	Focus servo drive PWM signal (–) output to the BH6511FS (IC303)
90	FS4	O	Clock signal (176.4 kHz) output terminal (X’tal system) Not used (open)

Pin No.	Pin Name	I/O	Pin Description
91	SRDR	O	Sled servo drive PWM signal (–) output to the BH6511FS (IC303)
92	SFDR	O	Sled servo drive PWM signal (+) output to the BH6511FS (IC303)
93	SPRD	O	Spindle servo drive PWM signal (–) output to the BH6511FS (IC303)
94	SPFD	O	Spindle servo drive PWM signal (+) output to the BH6511FS (IC303)
95	FGIN	I	Not used (fixed at “L”)
96	TEST1	I	Input terminal for the test (fixed at “L”)
97	TEST2	I	
98	TEST3	I	
99	DVSS	—	Ground terminal (digital system)
100	EFMO	O	EFM signal output terminal when recording mode Not used (open)

* I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O.

• SERVO BOARD IC302 CXA2523AR (RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Pin Description
1	I	I	I-V converted RF signal I input from the optical pick-up block detector
2	J	I	I-V converted RF signal J input from the optical pick-up block detector
3	VC	O	Middle point voltage (+1.65 V) generation output terminal
4 – 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input from the optical pick-up block laser diode
11	APC	O	Laser amplifier output terminal to the automatic power control circuit
12	APCREF	I	Reference voltage input terminal for setting laser power from the CXD2652AR (IC301)
13	GND	—	Ground terminal
14	TEMPI	I	Connected to the temperature sensor Not used (open)
15	TEMPR	O	Output terminal for a temperature sensor reference voltage Not used (open)
16	SWDT	I	Writing serial data input from the MD mechanism controller (IC501)
17	SCLK	I	Serial data transfer clock signal input from the MD mechanism controller (IC501)
18	XLAT	I	Serial data latch pulse signal input from the MD mechanism controller (IC501)
19	$\overline{\text{XSTBY}}$	I	Standby signal input terminal "L": standby (fixed at "H" in this set)
20	F0CNT	I	Center frequency control voltage input terminal of internal circuit (BPF22, BPF3T, EQ) input terminal
21	VREF	O	Reference voltage output terminal Not used (open)
22	EQADJ	I	Center frequency setting terminal for the internal circuit (EQ)
23	3TADJ	I	Center frequency setting terminal for the internal circuit (BPF3T)
24	VCC	—	Power supply terminal (+3.3 V)
25	WBLADJ	I	Center frequency setting terminal for the internal circuit (BPF22)
26	TE	O	Tracking error signal output to the CXD2652AR (IC301)
27	CSLED	I	Connected to the external capacitor for low-pass filter of the sled error signal
28	SE	O	Sled error signal output to the CXD2652AR (IC301)
29	ADFM	O	FM signal output of the ADIP
30	ADIN	I	Receives a ADIP FM signal in AC coupling
31	ADAGC	I	Connected to the external capacitor for ADIP AGC
32	ADFG	O	ADIP duplex signal (22.05 kHz ± 1 kHz) output to the CXD2652AR (IC301)
33	AUX	O	Auxiliary signal (I3 signal/temperature signal) output terminal Not used (open)
34	FE	O	Focus error signal output to the CXD2652AR (IC301)
35	ABCD	O	Light amount signal (ABCD) output to the CXD2652AR (IC301)
36	BOTM	O	Light amount signal (RF/ABCD) bottom hold output to the CXD2652AR (IC301)
37	PEAK	O	Light amount signal (RF/ABCD) peak hold output to the CXD2652AR (IC301)
38	RF	O	Playback EFM RF signal output to the CXD2652AR (IC301)
39	RFAGC	I	Connected to the external capacitor for RF auto gain control circuit
40	AGCI	I	Receives a RF signal in AC coupling
41	COMPO	O	User comparator output terminal Not used (open)
42	COMPP	I	User comparator input terminal Not used (fixed at "L")
43	ADDC	I	Connected to the external capacitor for cutting the low band of the ADIP amplifier
44	OPO	O	User operational amplifier output terminal Not used (open)
45	OPN	I	User operational amplifier inversion input terminal Not used (fixed at "L")
46	RFO	O	RF signal output terminal
47	MORFI	I	Receives a MO RF signal in AC coupling
48	MORFO	O	MO RF signal output terminal

• SERVO BOARD IC501 CXP84340-217Q (MD MECHANISM CONTROLLER)

Pin No.	Pin Name	I/O	Pin Description
1 – 5	TIN3 to TIN7	I/O	Input of the 4 × 8 matrix test keys (“L” is always output, except in test mode) Not used (open)
6	LOAD	O	Loading motor control signal output to the loading motor drive (IC305) “H” active *1
7	EJECT	O	Loading motor control signal output to the loading motor drive (IC305) “H” active *1
8, 9	NCO	O	Not used (open)
10	MDMON	O	Power supply on/off control signal output of the MD mechanism deck section main power supply and loading motor drive (IC305) power supply “H”: power on
11	$\overline{\text{E-SW}}$	I	Inputs the disc loading completion detect switch detection signal “L”: When completed of the disc loading operation
12	AG-OK	O	Output of aging status in test mode “L”: under aging, “H”: aging completed Not used (open)
13	ADJ-OK	O	Output of status when aging completed in test mode “L”: aging NG, “H”: aging OK Not used (open)
14 – 17	NCO	O	Not used (open)
18	DFCTSEL	I	Select whether defect function is used for the CXD2652AR (IC301) “L”: used this function , “H”: not used this function (fixed at “H” in this set)
19	DPLLSEL	I	Select whether digital PLL function is used for the CXD2652AR (IC301) “L”: used this function , “H”: not used this function (fixed at “H” in this set)
20	EMPHSEL	I	Select whether emphasis signal output from pin or unilink data “L”: outputs from both pin and unilink data, “H”: output from pin only (fixed at “H” in this set)
21	LOCK	O	Mini-disc lock detection signal output to the liquid crystal display driver “H”: lock CLV lock status input in test mode
22	NCO	O	Not used (open)
23	2M/$\overline{\text{4M}}$	I	Select whether D-RAM capacitance 2M bit or 4M bit “L”: 4M bit (external D-RAM), “H”: 2M bit (internal D-RAM of CXD2652AR) (fixed at “L” in this set)
24, 25	NCO	O	Not used (open)
26	MNT0	I	Focus OK signal input from the CXD2652AR (IC301) “H” is input when focus is on (“L”: NG)
27	MNT1	I	Track jump detection signal input from the CXD2652AR (IC301)
28	MNT2	I	Busy monitor signal input from the CXD2652AR (IC301)
29	MNT3	I	Spindle servo lock status monitor signal input from the CXD2652AR (IC301)
30	$\overline{\text{RESET}}$	I	System reset signal input from the master controller (IC801), reset signal generator (IC902) and reset switch (S900) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
31	EXTAL	O	Main system clock output terminal (10 MHz)
32	XTAL	I	Main system clock input terminal (10 MHz)
33	VSS	—	Ground terminal
34	TX	O	Sub system clock output terminal (32.768 kHz) Not used (open)
35	TEX	I	Sub system clock input terminal (32.768 kHz) Not used (fixed at “L”)
36	AVSS	—	Ground terminal (for A/D converter)
37	AVREF	I	Reference voltage input terminal (+5 V) (for A/D converter)
38	INIT	I	Initial reset signal input terminal (A/D input) (fixed at “H”)
39	TEMP	I	Temperature sensor (TH501) input terminal (A/D input)
40	ACNT	I	Select the number of load/eject aging times (A/D input) 0H – 54H (30 times), 55H – OA9H (20 times), OAAH – OFFH (10 times) (fixed at “L”)
41	DO-SEL	I	Select the digital output bits (A/D input)
42	EE-CS	O	Chip select signal output to the external EEPROM device Not used (open)
43	EE-CKO	O	Serial data transfer clock signal output to the external EEPROM device Not used (open)
44	EE-SIO	I/O	Two way data bus with the external EEPROM device Not used (open)
45	MD-SO	O	Writing serial data signal output to the CXD2652AR (IC301) and CXA2523AR (IC302)

Pin No.	Pin Name	I/O	Pin Description
46	LINKOFF	O	Unilink on/off control signal output for the SONY bus "L": link on, "H": link off
47	UNIREQ	O	Data request signal output terminal (for SONY bus) "H": request on Not used (open)
48	UNICKIO	I/O	Serial clock signal input from the master controller (IC801) or serial clock signal output to the SONY bus interface (IC802) and master controller (IC801) (for SONY bus)
49	UNISI	I	Serial data input from the SONY bus interface (IC802)
50	UNISO	O	Serial data output to the SONY bus interface (IC802)
51	MD-CKO	O	Serial data transfer clock signal output to the CXD2652AR (IC301) and CXA2523AR (IC302)
52	MD-SI	I	Reading serial data signal input from the CXD2652AR (IC301)
53	NCO	O	Not used (open)
54	SENS	I	Internal status (SENSE) input from the CXD2652AR (IC301)
55	CC-XINT	I	Interrupt status input from the CXD2652AR (IC301)
56	$\overline{\text{LIMIT-IN}}$	I	Detection input from the sled limit-in detect switch The optical pick-up is inner position when "L"
57	EJT-KEY	I	Eject request signal input terminal "L": eject on Not used (fixed at "H")
58	ERROR-PWM	O	PWM error monitor output terminal (C1and ATER is output when test mode) Not used (open)
59	$\overline{\text{MD-RST}}$	O	Reset signal output to the CXD2652AR (IC301) and BH6511FS (IC303) "L": reset
60	BU-IN	I	Battery detect signal input from the SONY bus interface and battery check circuit "H": battery on
61	$\overline{\text{BUS-ON}}$	I	SONY bus on/off control signal input from the master controller (IC801) "L": bus on
62	SQSY	I	Subcode Q sync (SCOR) input from the CXD2652AR (IC301) "L" is input every 13.3 msec Almost all, "H" is input
63	$\overline{\text{C-SW}}$	I	Inputs the disc loading start or disc eject completion detect switch detection signal "L": When start or eject completed of the disc loading operation
64	MD-LAT	O	Serial data latch pulse signal output to the CXD2652AR (IC301) and CXA2523AR (IC302)
65	MD-ON	O	Power supply on/off control signal output of the MD mechanism deck section main power supply "H": power on
66	DEEMP	O	Emphasis on/off control signal output to the master controller (IC801) "H": emphasis on
67	A-MUTE	O	Audio muting on/off control signal output terminal
68	NCO	O	Not used (open)
69	TSTCKO	O	Output of clock signal for the test mode display Not used (open)
70	TSTSO	O	Output of data for the test mode display Not used (open)
71	$\overline{\text{TSTMOD}}$	I	Setting terminal for the test mode "L": test mode, "H": normal mode
72	VCC	—	Power supply terminal (+5 V)
73	NIL	I	Not used (fixed at "H")
74 – 77	TOUT0 to TOUT3	O	Output of the 4 × 8 matrix test keys Not used (open)
78 – 80	TIN0 to TIN2	I/O	Input of the 4 × 8 matrix test keys ("L" is always output, except in test mode) Not used (open)

*1 Loading motor (M903) control

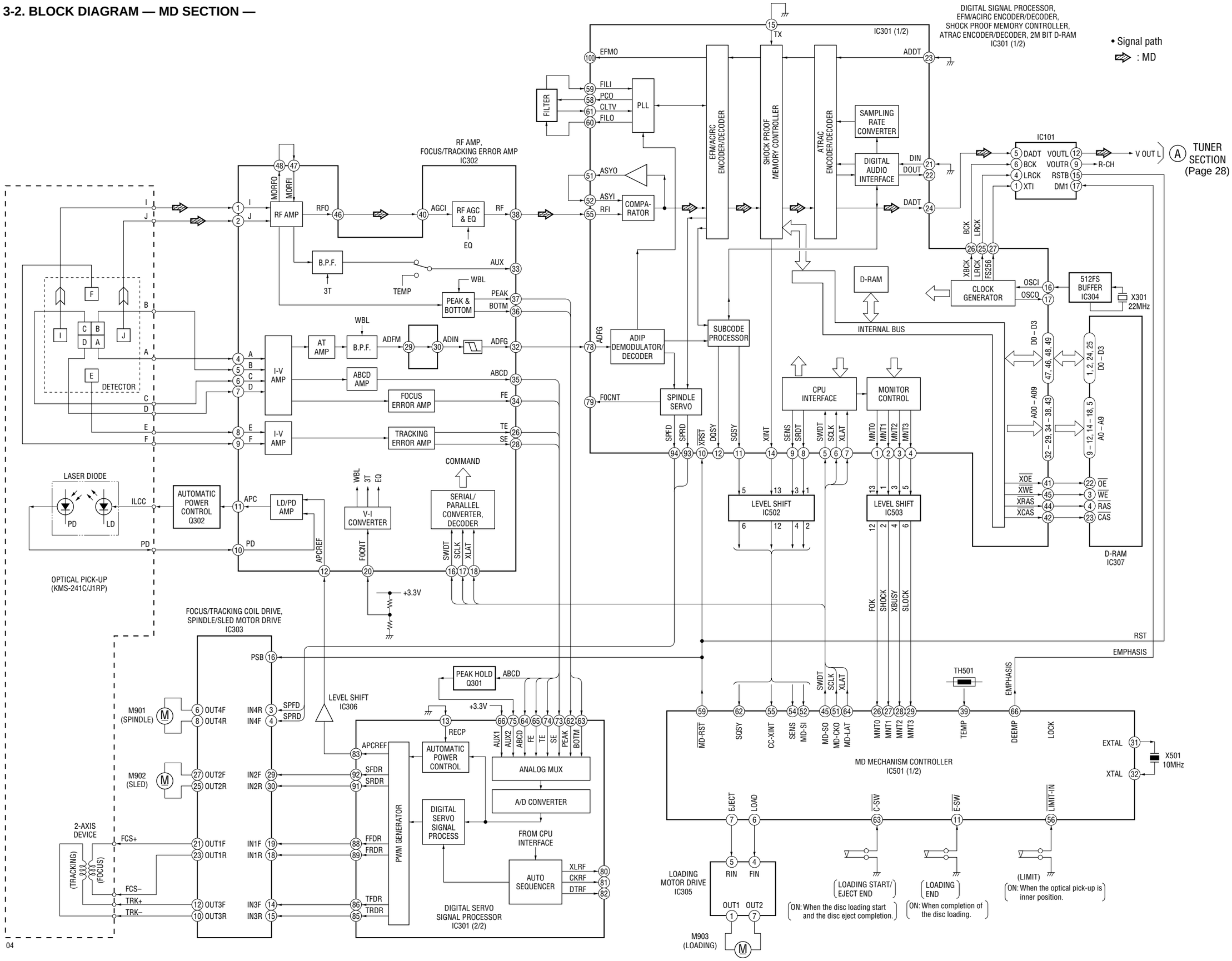
Operation / Terminal	IN	OUT	BRAKE	STOP
LOAD (pin ⑥)	"H"	"L"	"H"	"L"
EJECT (pin ⑦)	"L"	"H"	"H"	"L"

• MAIN BOARD IC801 MN101C49KTB (SYSTEM CONTROL)

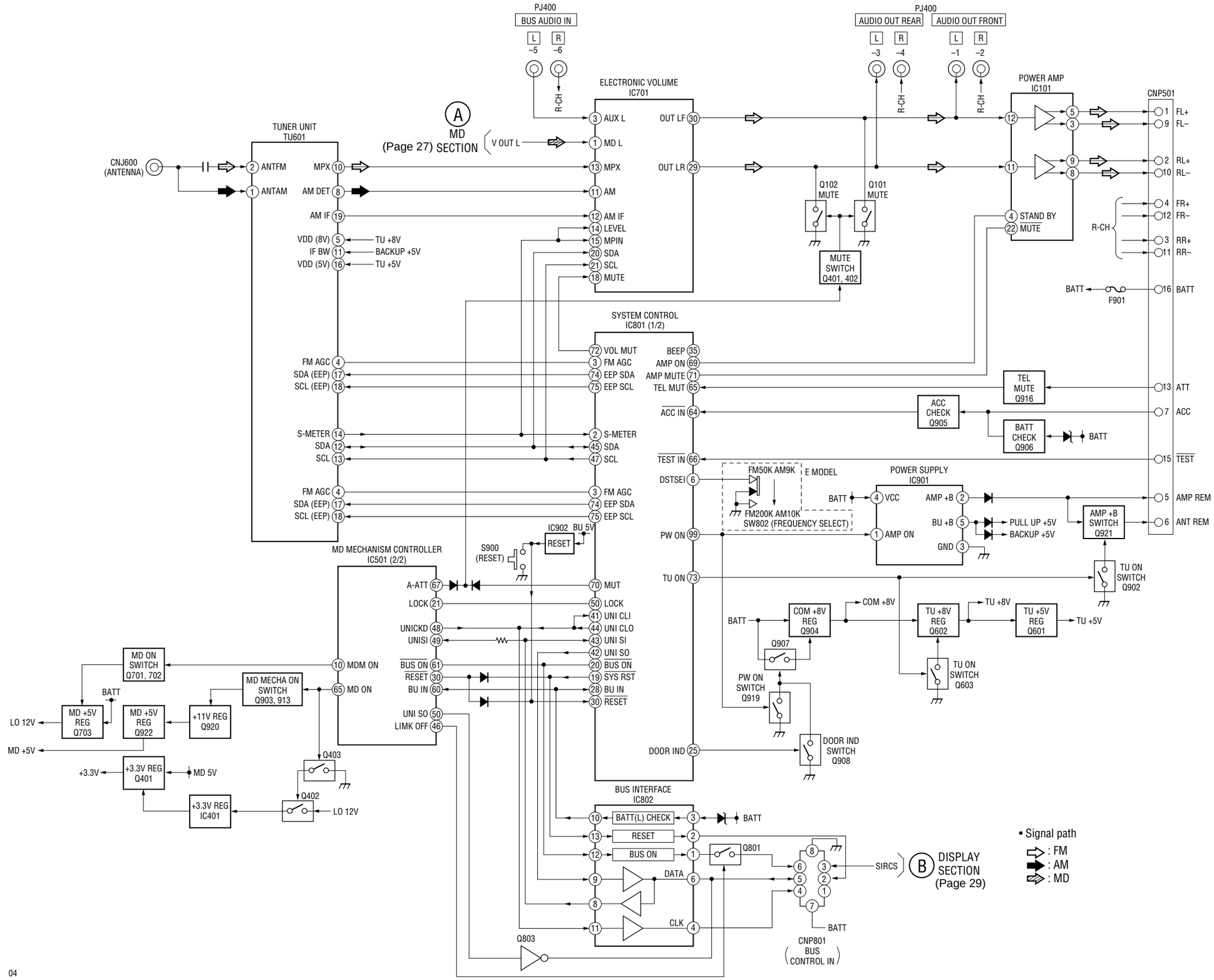
Pin No.	Pin Name	I/O	Pin Description
1	VREF–	—	Ground for A/D converter power supply
2	S METER	I	S meter voltage detect signal input
3	FM AGC	I	FM auto gain control signal input
4	KEY IN1	I	KEY signal input
5	KEY IN0	I	KEY signal input
6	DSTSEL	I	Not used.
7	RC IN0	I	Rotary commander signal input
8	FUNC SEL	I	Model function selection pin
9	NIL	—	Ground
10	VREF+	—	A/D converter power supply
11	VDD	—	Power supply (+5 V) input pin
12	OSC OUT	O	High speed clock signal output (18.432 MHz)
13	OSC IN	I	High speed clock signal input (18.432 MHz)
14	VSS	—	Ground for power supply
15	XI	I	Low speed clock signal input (32 kHz)
16	XO	O	Low speed clock signal output (32 kHz)
17	MMOD	—	Not used. (Fixed at “L”.) Memory mode select signal input
18	RC IN1	I	Rotary commander shift key signal input
19	$\overline{\text{SYSRST}}$	O	System reset signal output
20	$\overline{\text{BUS ON}}$	O	Bus on control signal output
21	LCD DATA	O	LCD serial data signal output
22	LCD CE	O	LCD chip enable signal output
23	LCD CLK	O	LCD serial clock signal output
24	ILL ON	O	Illumination power supply control signal output
25	DOOR IND	O	Control signal output for power on sub panel when open to front panel
26	KEY ACK	I	Key active interrupt detect signal input
27	$\overline{\text{NOSE}}$	I	Front panel attachment detection input
28	BU IN	I	Back up power supply setect signal input
29	SIRCS	I	Remote control signal input
30, 31	NC	—	Not used. (Fixed at “L”.)
32	RAM	—	Not used.
33	$\overline{\text{RESET}}$	I	Reset signal input
34	NC	—	Not used.
35	BEEP	O	Beep signal input
36	NC (FUNC SEL)	I	Model function selection pin
37	NC (FUNC SEL)	I	Model function selection pin
38 – 40	NC	—	Not used.
41	UNI CLI	I	Bus system serial clock signal input
42	UNI SO	O	Bus system serial interface signal output
43	UNI SI	I	Bus system serial interface signal input
44	UNI CLO	O	Bus system serial clock signal output
45	SDA	I/O	I2C bus serial data signal input/output
46	NC	—	Not used.
47	SCL	O	I2C bus serial clock signal output
48, 49	NC	—	Not used.
50	LOCK	I	Check when remove to lock of MDNO CLV SERVO
51 – 63	NC	—	Not used.
64	$\overline{\text{ACC IN}}$	I	Accessory power supply voltage detection input
65	TEL MUT	I	Telephone attenuate detect signal input
66	$\overline{\text{TEST IN}}$	I	Test mode setting detect first stage signal input
67	ANT CUT	—	Not used.
68	NC	—	Not used.

Pin No.	Pin Name	I/O	Pin Description
69	AMP ON	O	Power supply on/off control signal output
70	MUT	O	System attenuate control signal output
71	AMP MUT	O	Power amp attenuate control signal output
72	VOL MUT	O	Mute control signal output for electrical volume
73	TU ON	O	Tuner attenuate signal output
74	EEP SDA	I/O	Tuner EEPROM serial data signal input/output
75	EEP SCL	O	Runer EEPROM serial clock signal output
76	IF BW	I	Not used.
77	NC	—	Not used. Tuner switch VCO level shift signal input
78	NC	—	Not used.
79	REIN1	I	Rotary encoder signal input
80	REIN0	I	Rotary encoder signal input
81	$\overline{\text{AD ON}}$	O	Power control output for A/D conversion
82 – 92	NC	—	Not used.
93	OPEN	I	Front panel open/close condition signal input
94 – 98	NC	—	Not used.
99	PW ON	O	System power supply control signal output
100	NC	—	Not used.

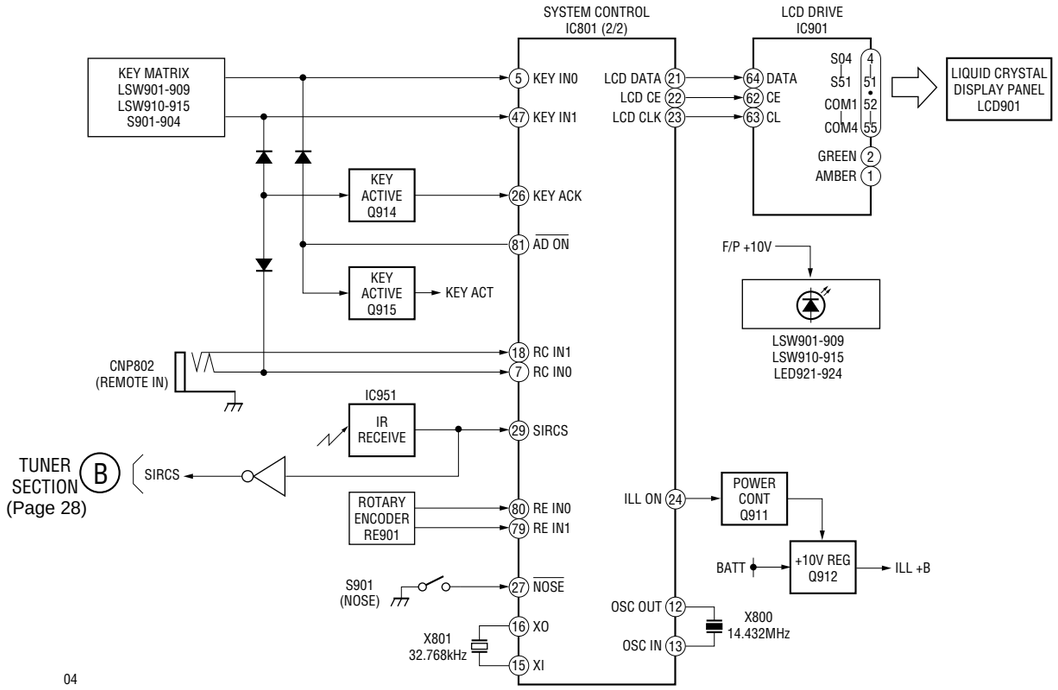
3-2. BLOCK DIAGRAM — MD SECTION —



3-3. BLOCK DIAGRAM — TUNER SECTION —

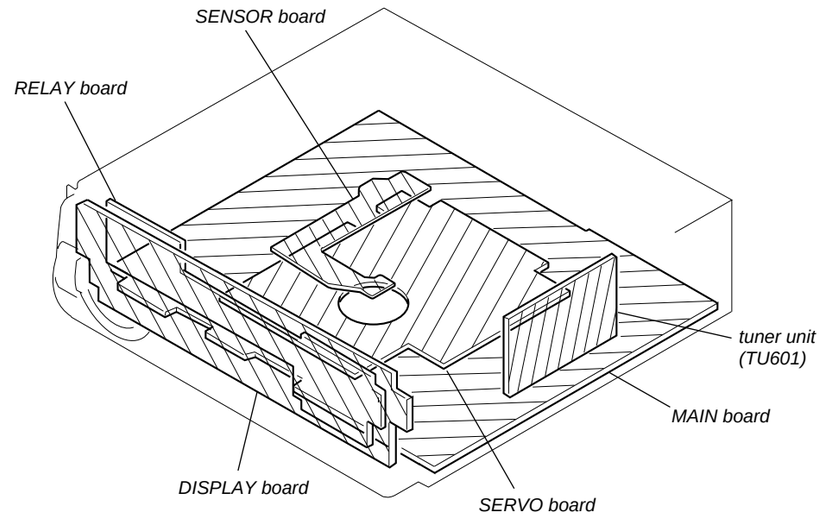


3-4. BLOCK DIAGRAM — DISPLAY SECTION —



04

3-5. CIRCUIT BOARDS LOCATION



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

for schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

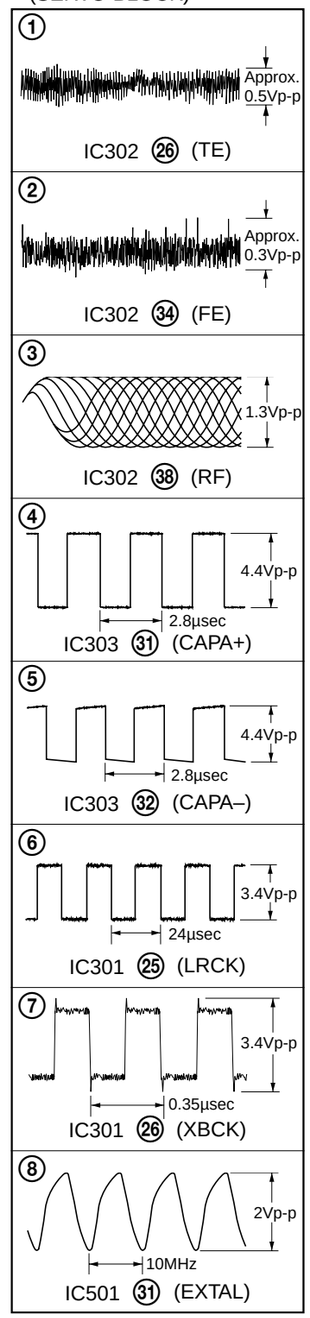
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM
  - ⇨ : MD

for printed wiring boards:

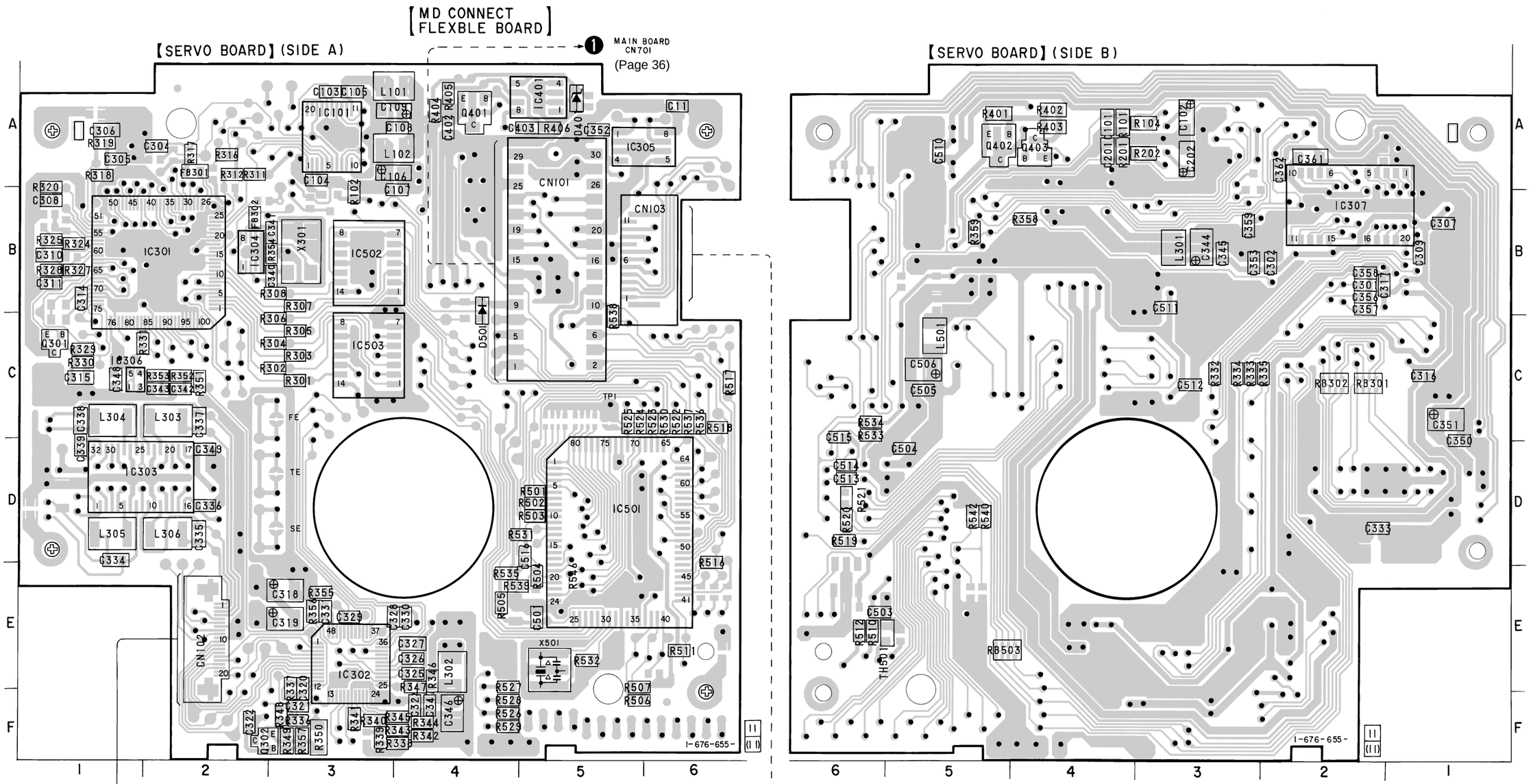
- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ○ : Through hole.
- ▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side (Side B): Parts on the pattern face side seen from the pattern face are indicated.
Parts face side (Side A): Parts on the parts face side seen from the parts face are indicated.

• Waveforms (MODE:PLAY) (SERVO BLOCK)



3-6. PRINTED WIRING BOARD — MD MECHANISM SECTION —



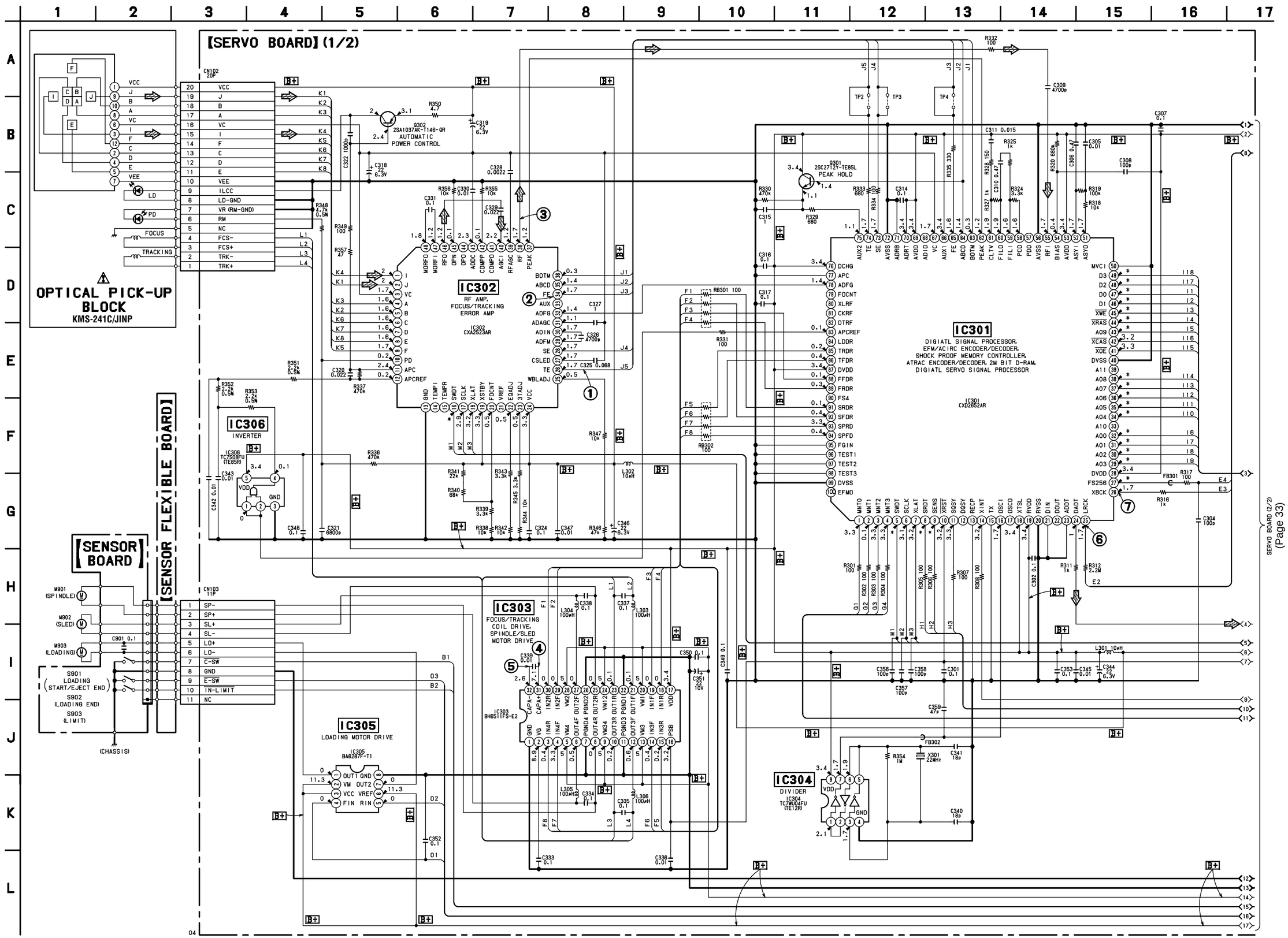
- **Semiconductor Location**

Ref. No.	Location
D401	A-5
D501	C-4
IC101	A-3
IC301	B-2
IC302	E-3
IC303	D-1
IC304	B-2
IC305	A-5
IC306	C-1
(IC307)	B-2
IC401	A-5
IC501	D-5
IC502	B-3
IC503	C-3
Q301	C-1
Q302	F-2
Q401	A-4
(Q402)	A-5
(Q403)	A-4

( ) : SIDE B

04

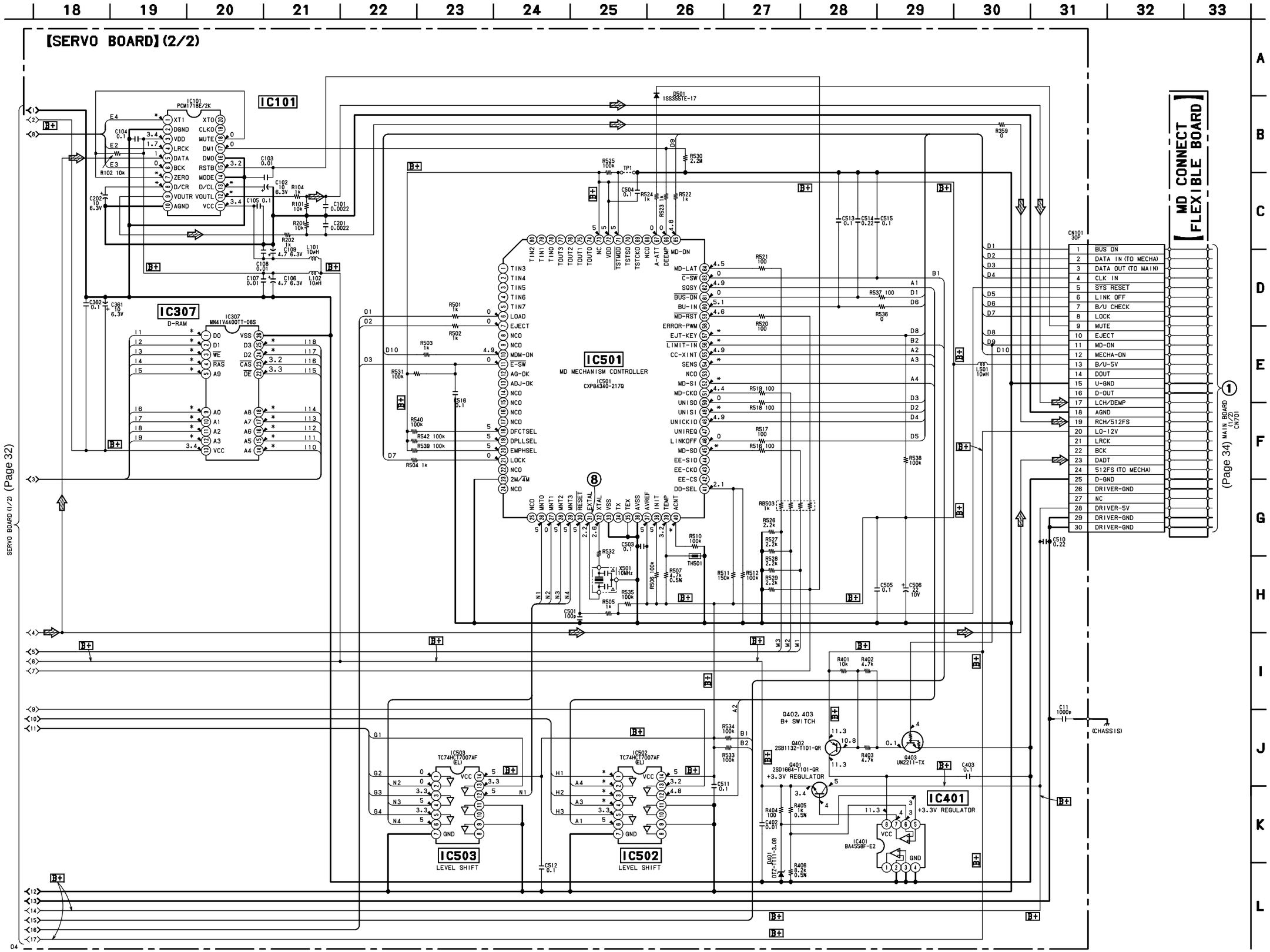
3-7. SCHEMATIC DIAGRAM — MD MECHANISM SECTION (1/2) — • Refer to page 39 for IC Block Diagrams. Refer to page 28 for waveforms.



Note:

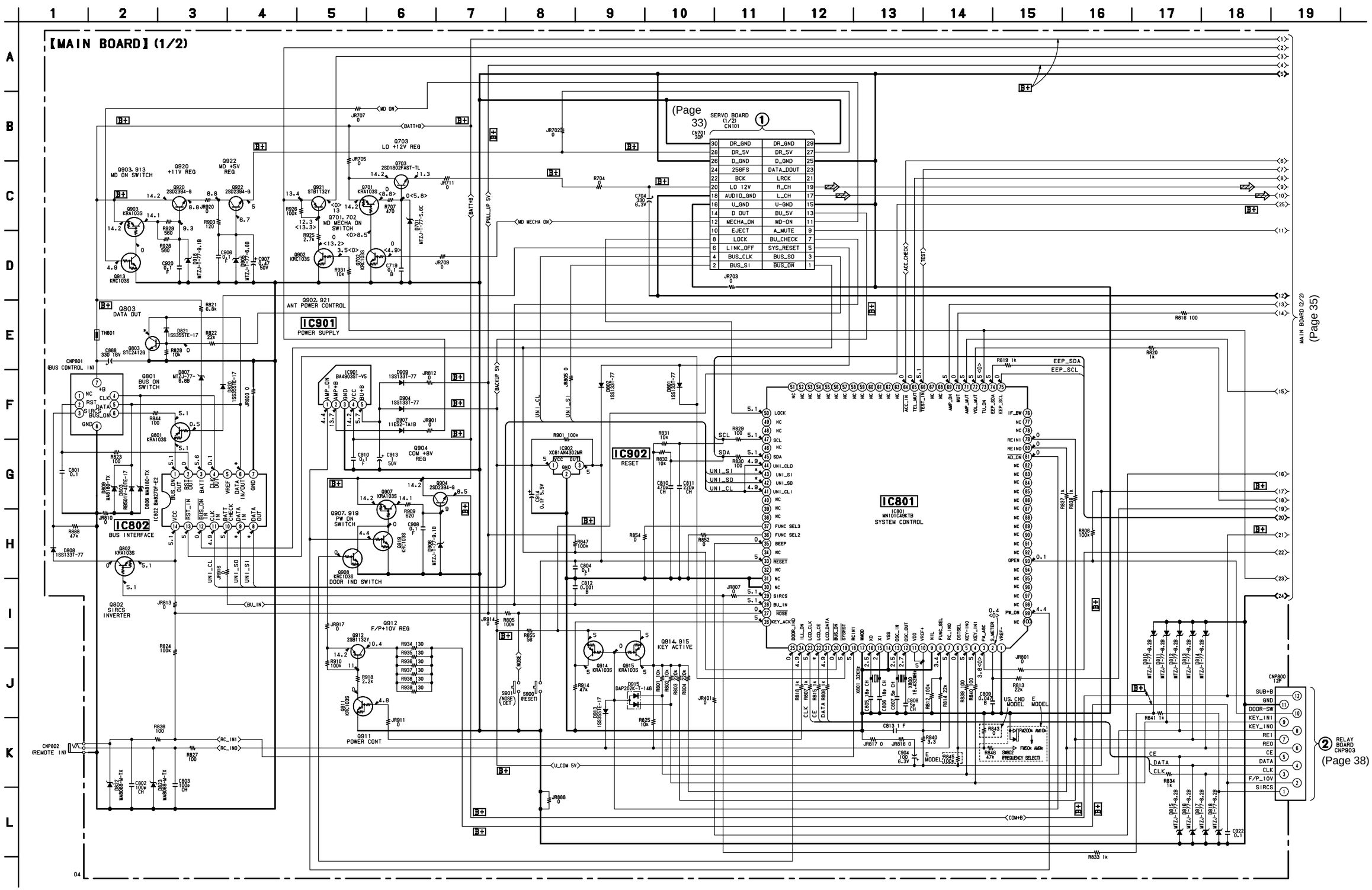
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : MD PLAY
  * : Impossible to measure

3-8. SCHEMATIC DIAGRAM — MD MECHANISM SECTION (2/2) — • Refer to page 43 for IC Block Diagrams. Refer to page 30 for waveforms.



Note:
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : MD PLAY
  * : Impossible to measure

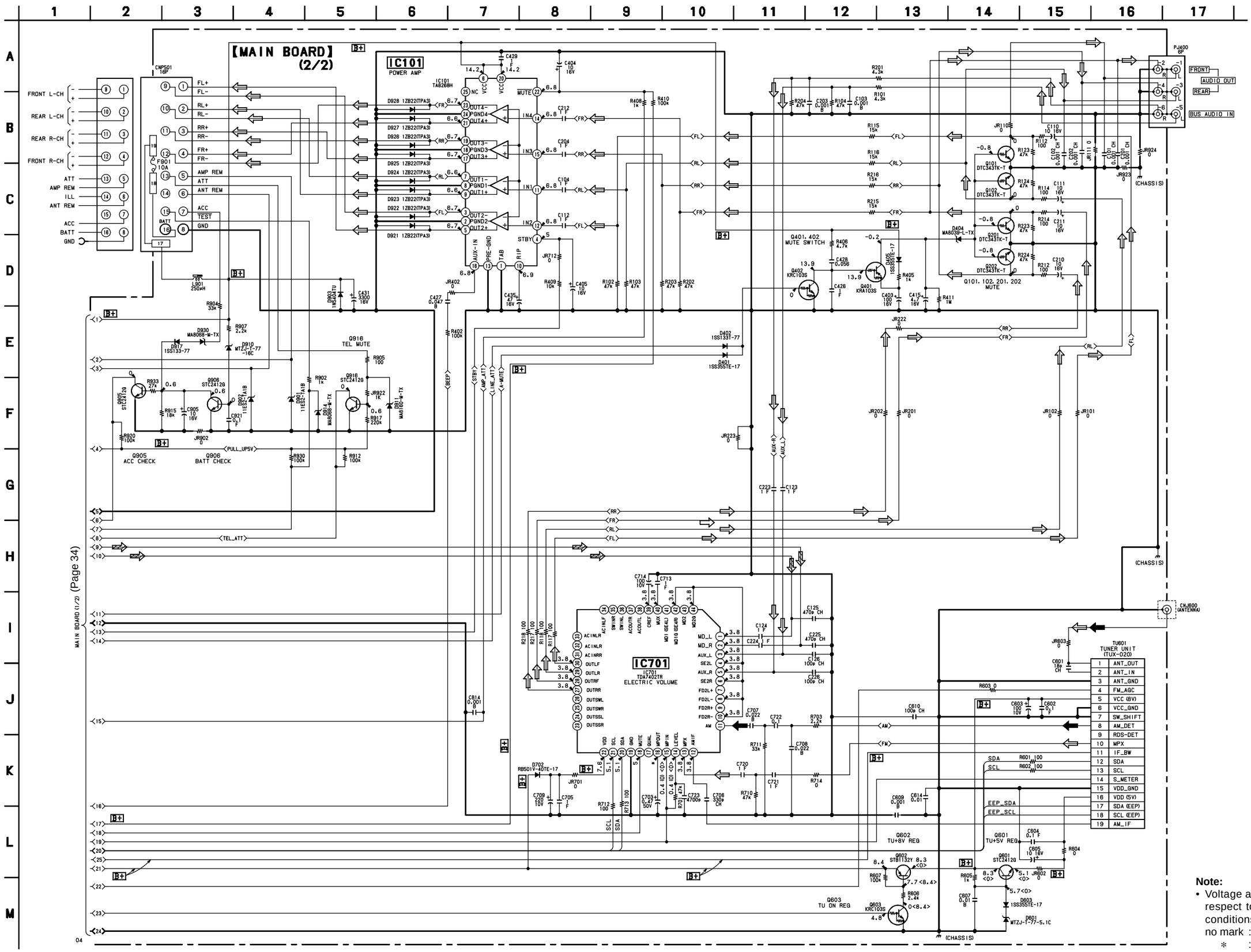
3-9. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — • Refer to page 42 for IC Block Diagrams.



Note:

- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : MD PLAY
  ∗ : Impossible to measure

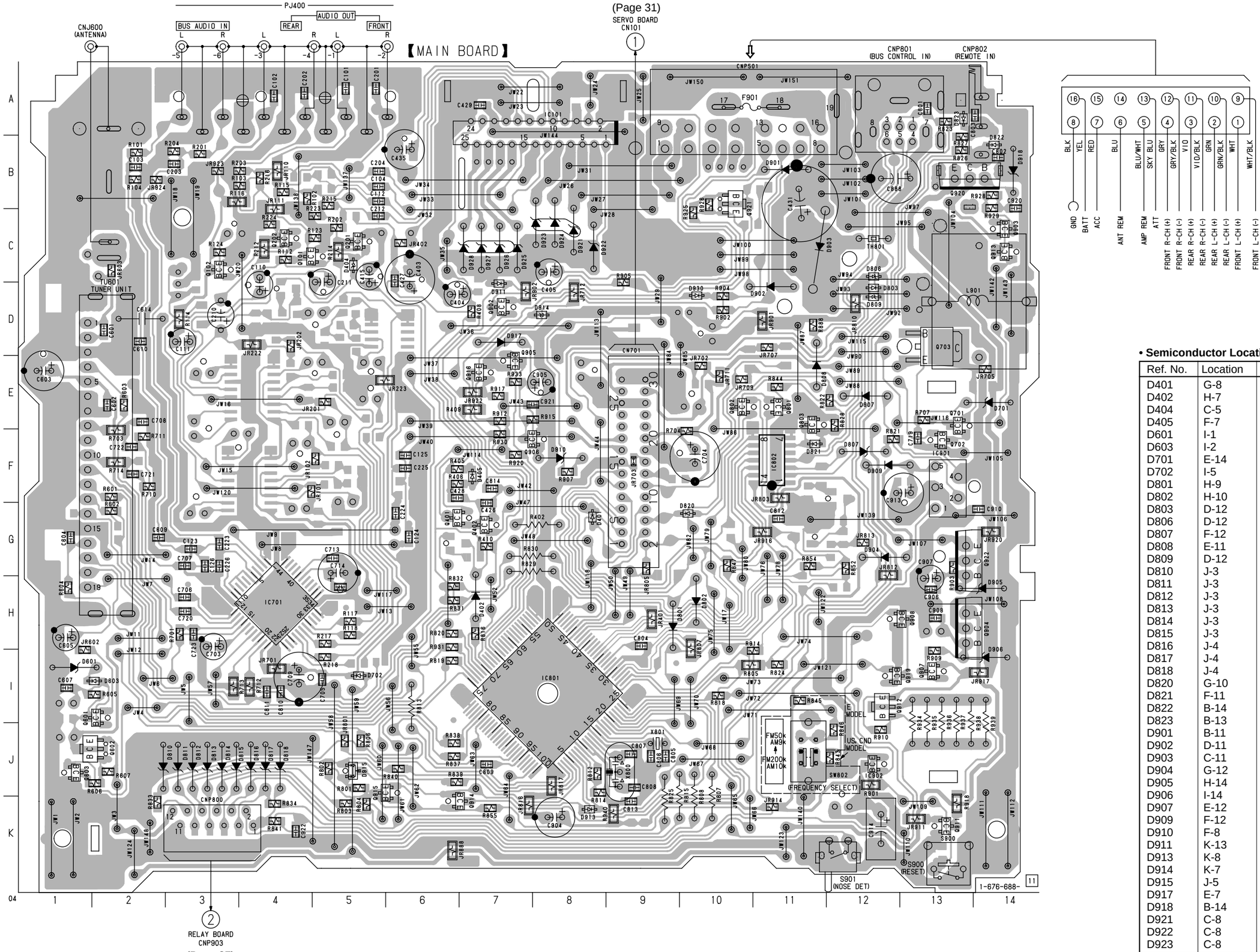
3-10. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 45 for IC Block Diagrams.



Note:

- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : MD PLAY
  ∗ : Impossible to measure

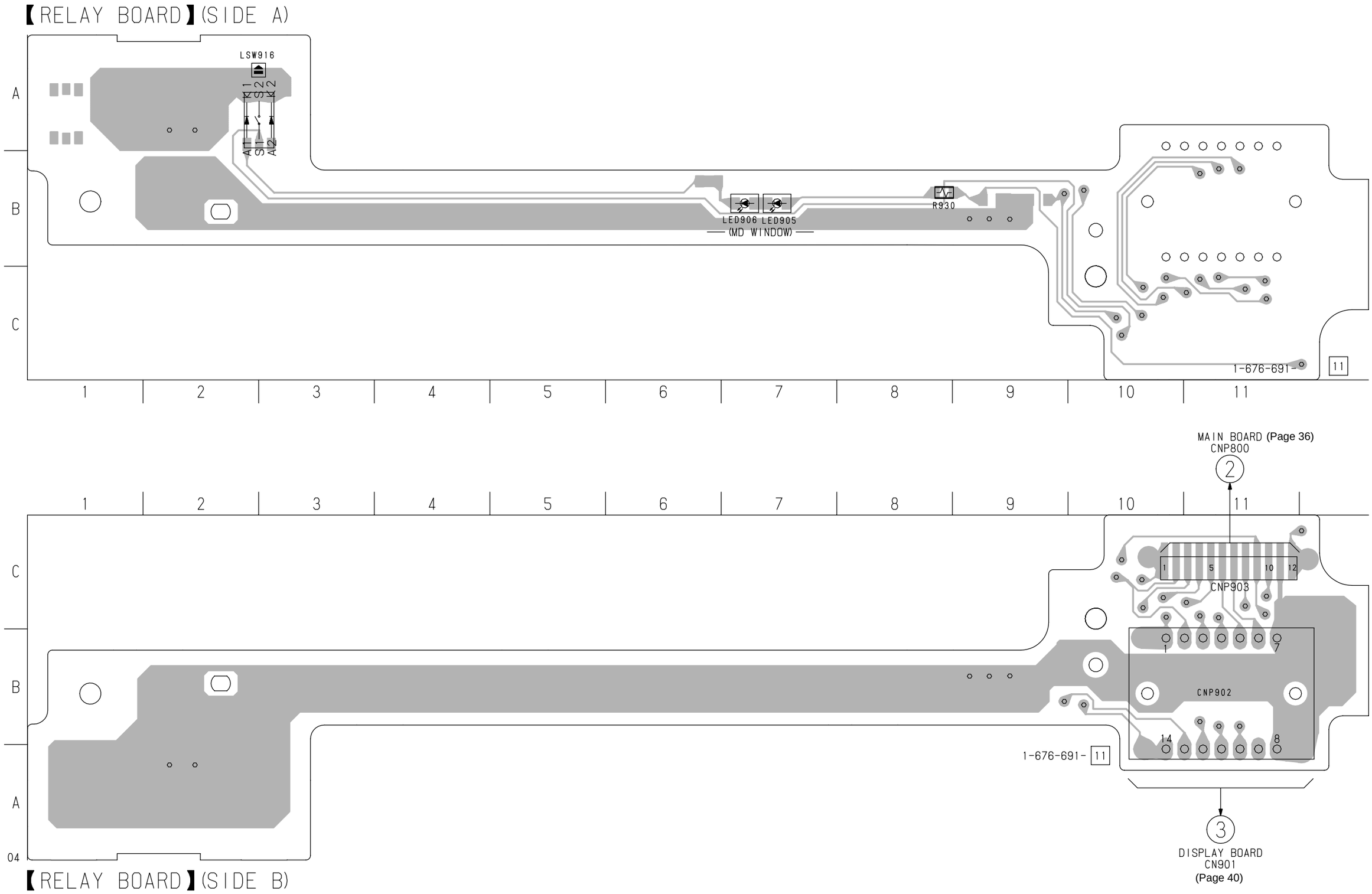
3-11. PRINTED WIRING BOARD — MAIN SECTION —



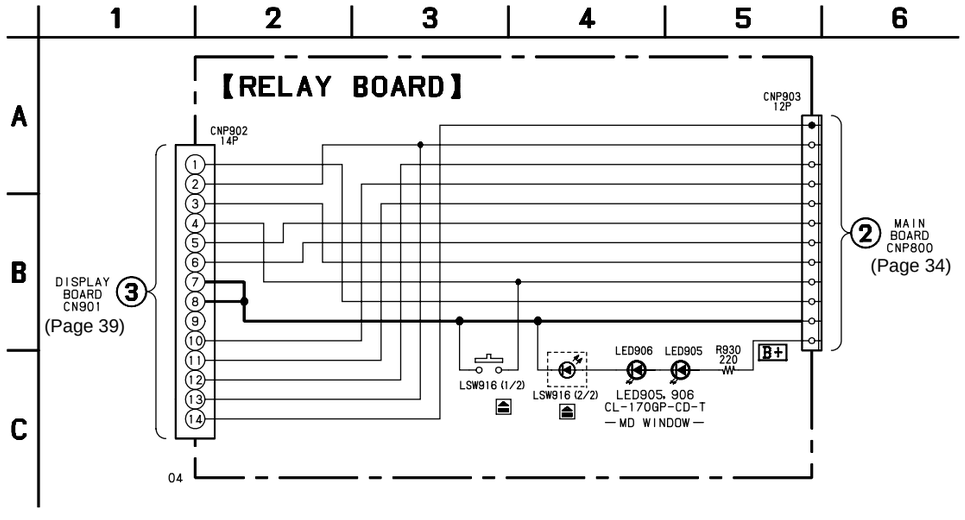
- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D401	G-8	D924	C-8
D402	H-7	D925	C-7
D404	C-5	D926	C-7
D405	F-7	D927	C-7
D601	I-1	D928	C-7
D603	I-2	D930	D-10
D701	E-14		
D702	I-5	IC101	B-8
D801	H-9	IC701	H-4
D802	H-10	IC801	I-8
D803	D-12	IC802	F-11
D806	D-12	IC901	F-13
D807	F-12	IC902	J-12
D808	E-11		
D809	D-12	Q101	C-5
D810	J-3	Q102	C-3
D811	J-3	Q201	C-5
D812	J-3	Q202	C-4
D813	J-3	Q401	G-6
D814	J-3	Q402	G-7
D815	J-3	Q601	I-1
D816	J-4	Q602	J-1
D817	J-4	Q603	J-1
D818	J-4	Q701	E-13
D820	G-10	Q702	F-13
D821	F-11	Q703	D-13
D822	B-14	Q801	E-11
D823	B-13	Q802	E-10
D901	B-11	Q803	F-11
D902	D-11	Q902	D-7
D903	C-11	Q903	C-14
D904	G-12	Q904	H-14
D905	H-14	Q905	E-7
D906	I-14	Q906	F-8
D907	E-12	Q907	I-13
D909	F-12	Q908	H-12
D910	F-8	Q911	K-13
D911	K-13	Q912	J-12
D913	K-8	Q913	C-14
D914	K-7	Q914	K-7
D915	J-5	Q915	J-5
D917	E-7	Q916	C-7
D918	B-14	Q919	I-12
D921	C-8	Q920	B-13
D922	C-8	Q921	C-10
D923	C-8	Q922	G-14

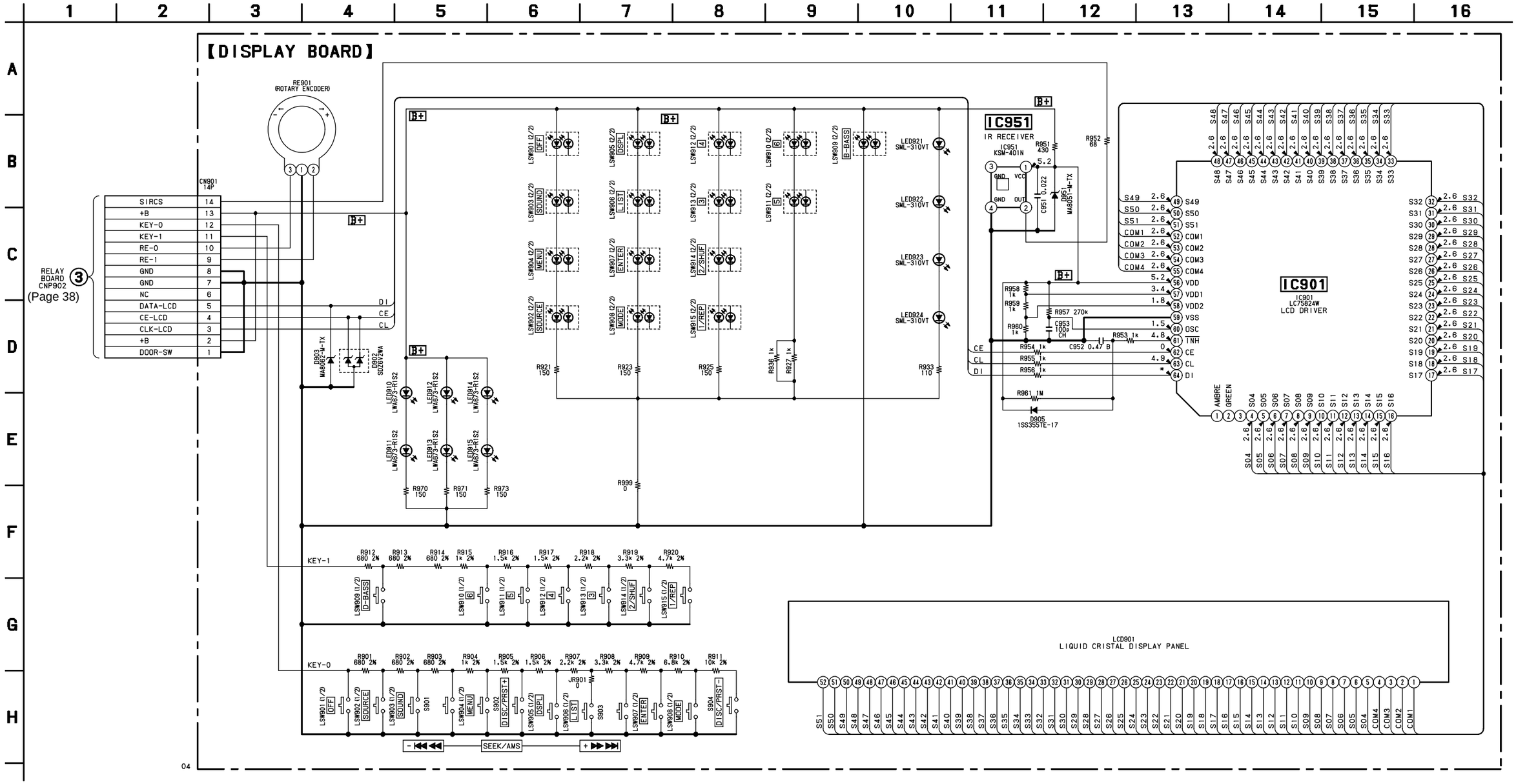
3-12. PRINTED WIRING BOARD — RELAY SECTION —



3-13. SCHEMATIC DIAGRAM — RELAY SECTION —



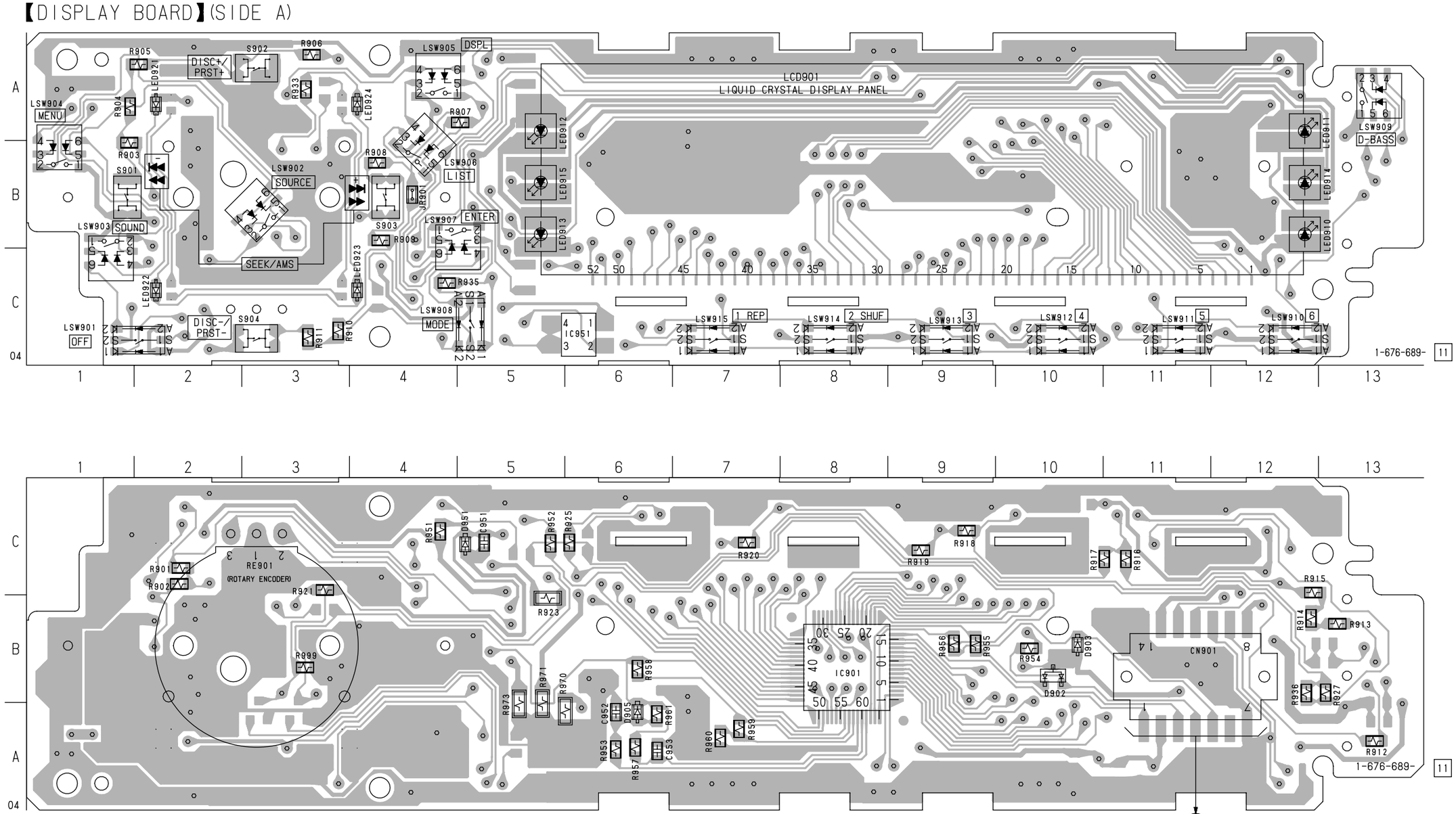
3-14. SCHEMATIC DIAGRAM — DISPLAY SECTION —



Note:

- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : MD PLAY
  ✻ : Impossible to measure

3-15. PRINTED WIRING BOARD — DISPLAY SECTION —



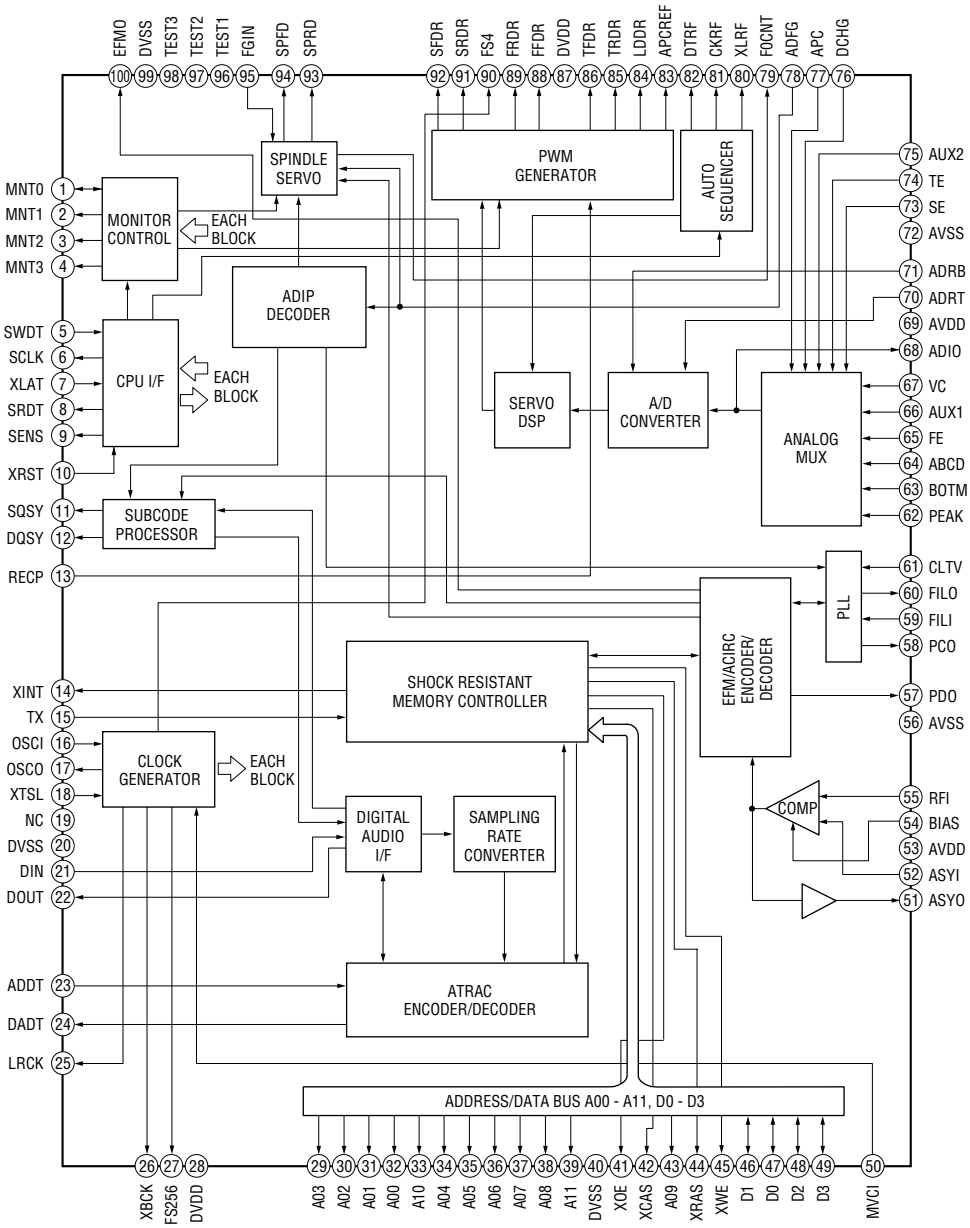
- **Semiconductor Location**

Ref. No.	Location
(D902)	B-10
(D903)	B-10
(D905)	A-6
(D951)	C-5
(IC901)	B-8
IC951	C-6
LED910	B-13
LED911	A-13
LED912	A-5
LED913	B-5
LED914	B-13
LED915	B-5
LED921	A-2
LED922	C-2
LED923	C-4
LED924	A-4

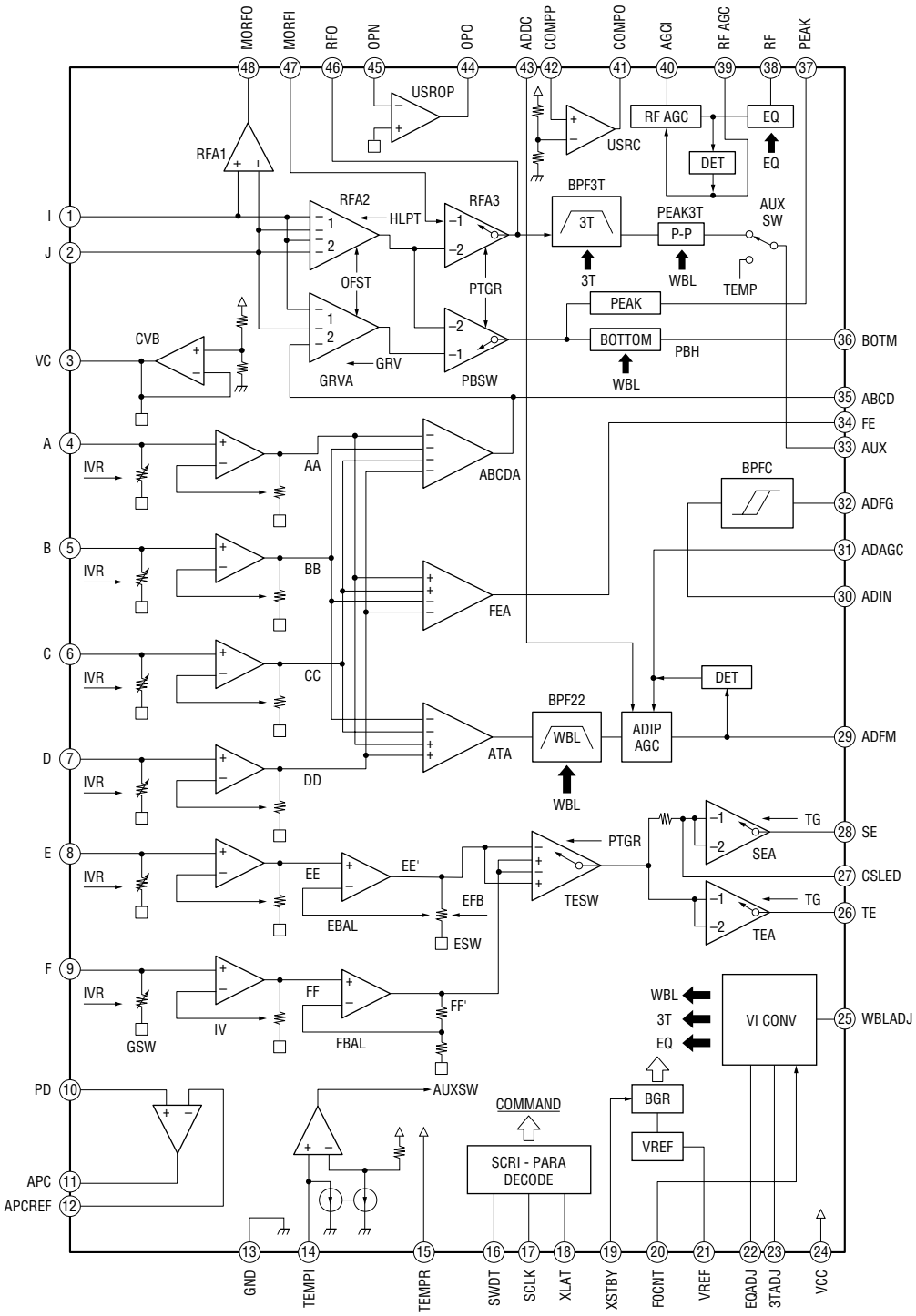
( ) : SIDE B

3-16. IC BLOCK DIAGRAMS

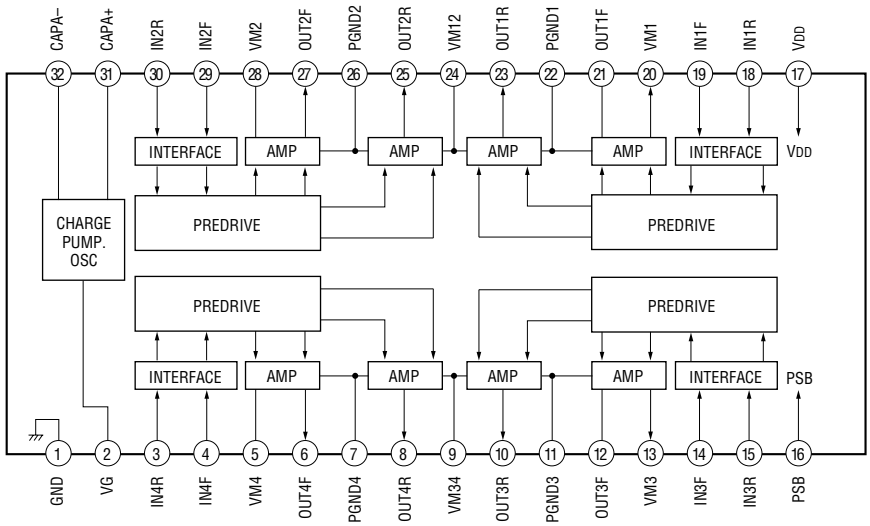
IC301 CXD2652AR



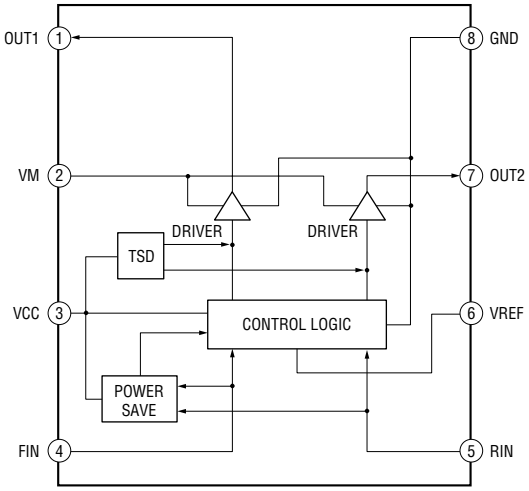
IC302 CXA2523AR



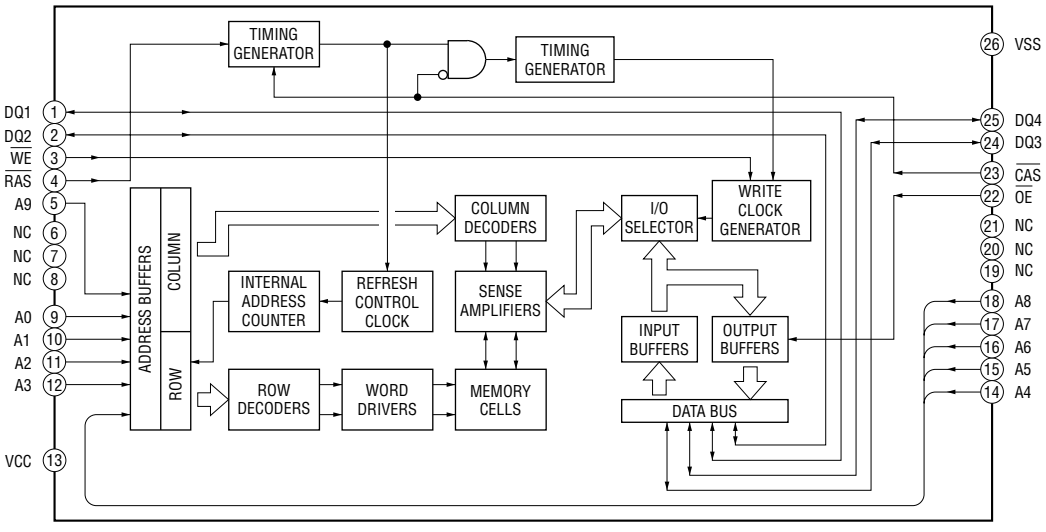
IC303 BH6511FS-E2



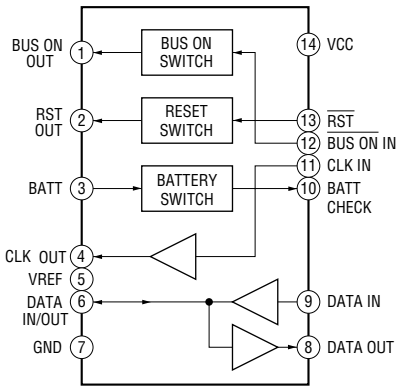
IC305 BA6287F-T1



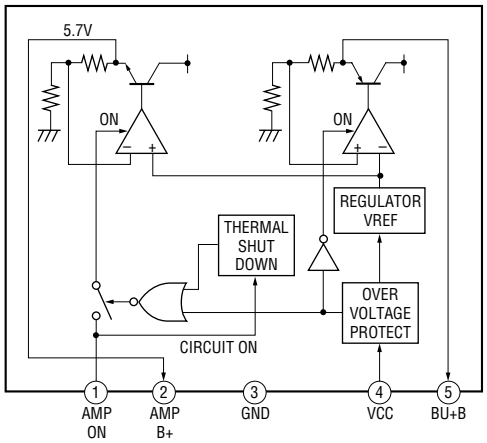
IC307 MN41V4400TT-08S



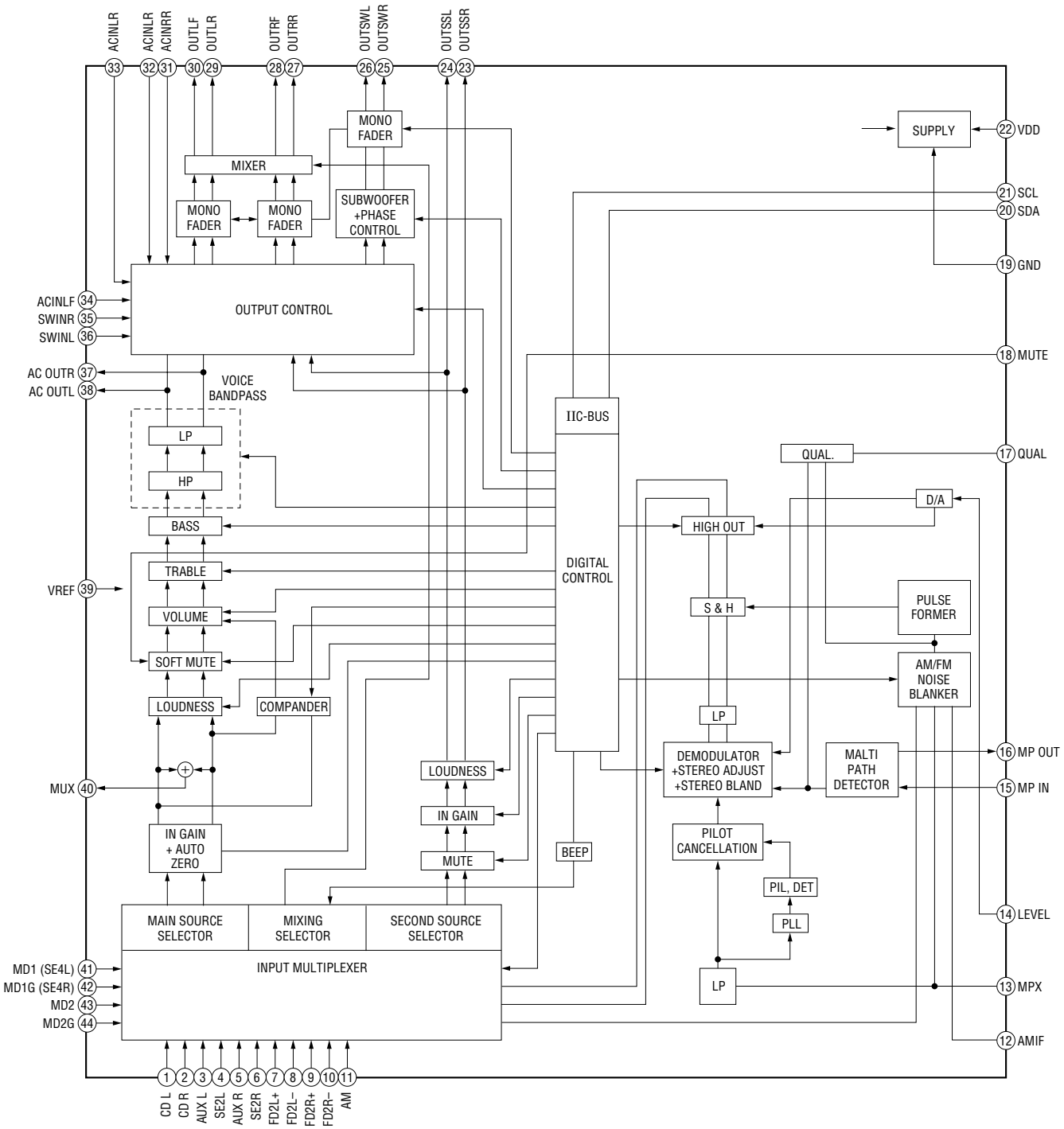
IC802 BA8270FV-E2



IC901 BA4903ST-V5



IC701 TDA7402TR



SECTION 4
EXPLODED VIEWS

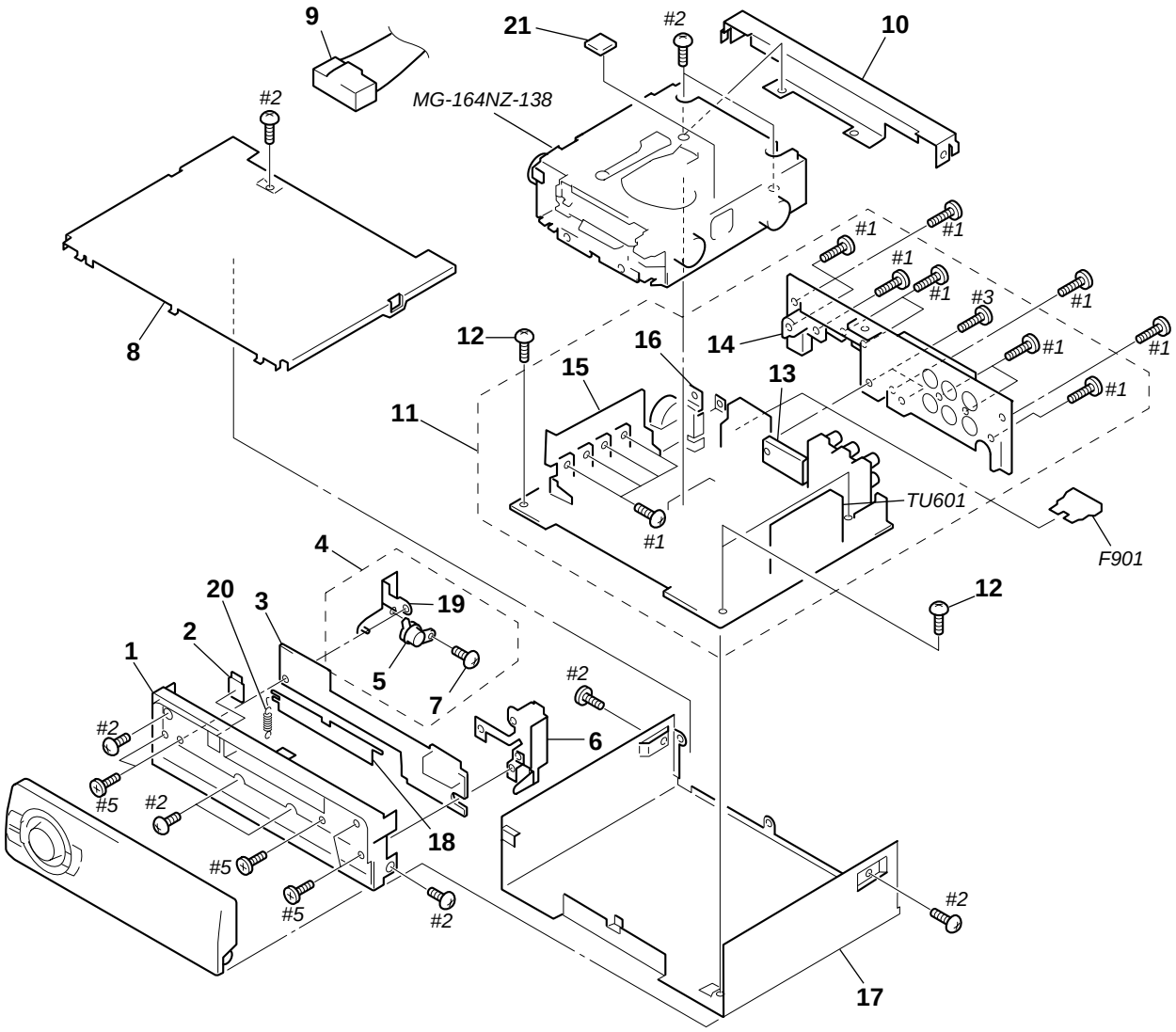
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

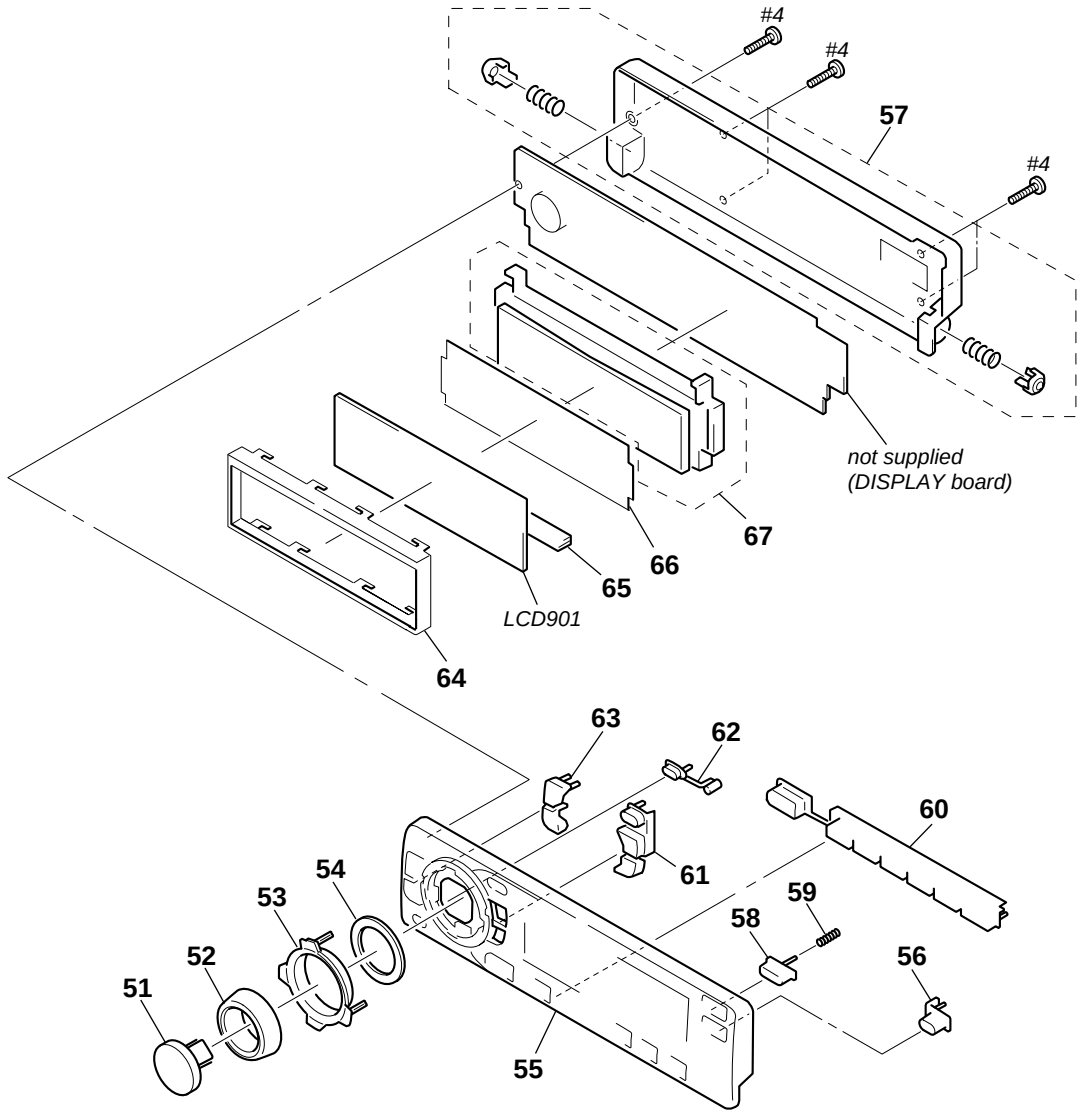
4-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	X-3378-388-1	PANEL ASSY (MD), SUB	
2	3-041-039-01	BUTTON (EJECT)	
* 3	1-676-691-11	RELAY BOARD	
4	X-3376-686-2	GEAR ASSY	
5	3-030-909-02	DAMPER, OIL	
6	X-3376-687-1	LOCK ASSY	
7	3-713-786-51	SCREW +P 2X3	
* 8	3-041-156-01	COVER	
9	1-792-194-21	CORD (WITH CONNECTOR) (POWER)	
* 10	3-042-972-01	BRACKET (MD)	
* 11	A-3294-806-A	MAIN BOARD, COMPLETE (US,CND)	
* 11	A-3294-873-A	MAIN BOARD, COMPLETE (E)	

Ref. No.	Part No.	Description	Remark
12	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
* 13	3-019-565-01	BRACKET (IC)	
* 14	3-041-157-01	HEAT SINK (6P)	
* 15	3-041-174-01	HEAT SINK (REG)	
* 16	3-041-261-01	BRACKET (TR)	
* 17	3-041-155-11	CHASSIS	
18	3-041-048-01	DOOR (MD)	
* 19	X-3376-689-1	BRACKET (GEAR) ASSY	
20	3-042-966-01	SPRING (DOOR)	
21	3-917-679-01	CUSHION (D)	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
TU601	A-3220-738-A	TUNER UNIT (TUX-020)	

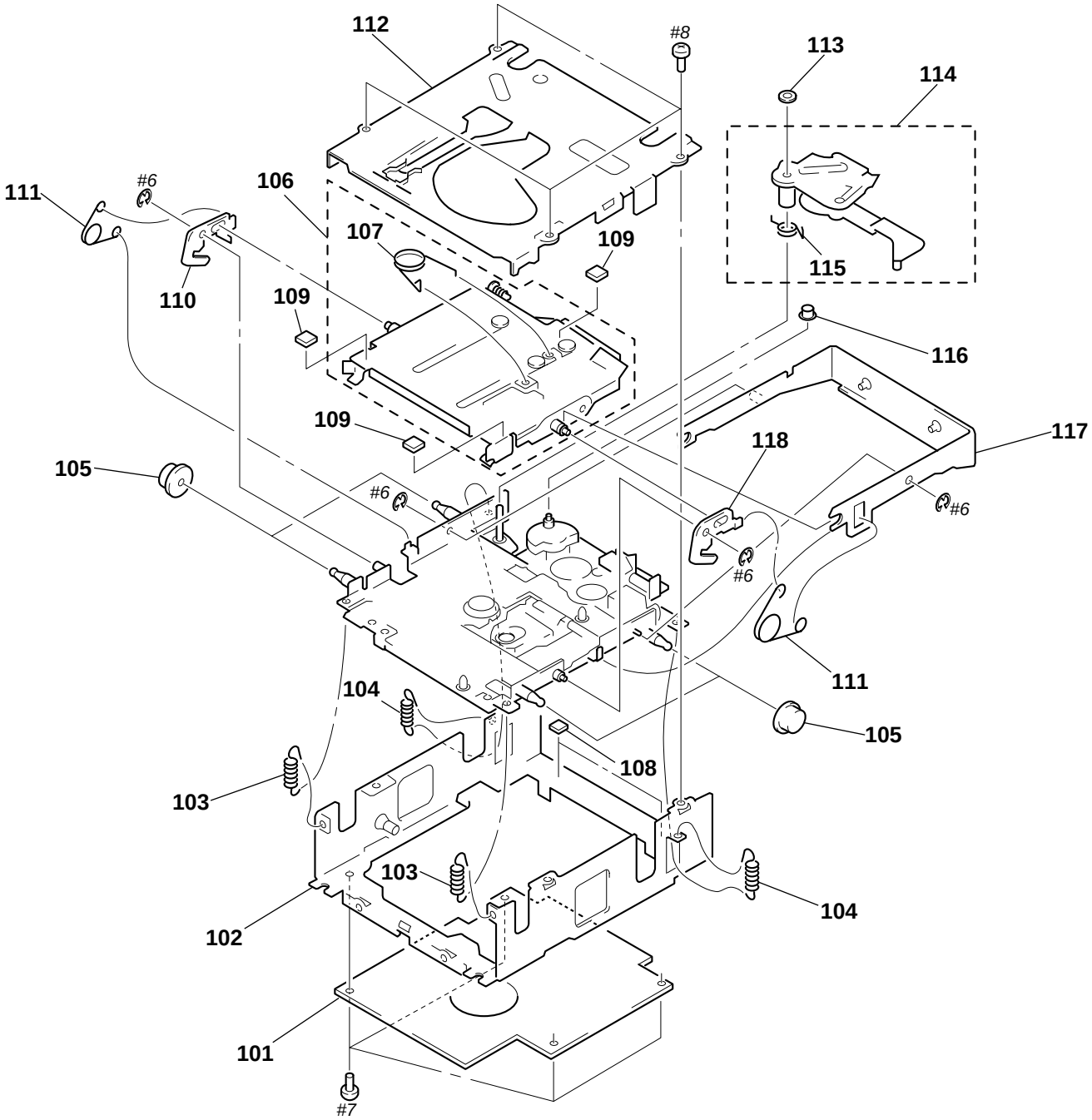
4-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-041-028-01	BUTTON (SOURCE)	
52	3-041-029-01	KNOB (VOL)	
53	3-041-030-01	BUTTON (CROSS)	
54	3-042-967-01	CUSHION (CROSS)	
55	X-3378-396-1	PANEL (S) ASSY, FRONT (US,CND)	
55	X-3378-761-1	PANEL (S) ASSY, FRONT (E)	
56	3-041-038-01	BUTTON (D)	
57	X-3378-391-1	PANEL ASSY, FRONT BACK	
58	3-041-037-01	BUTTON (OPEN)	
59	3-032-321-01	SPRING (OPEN)	

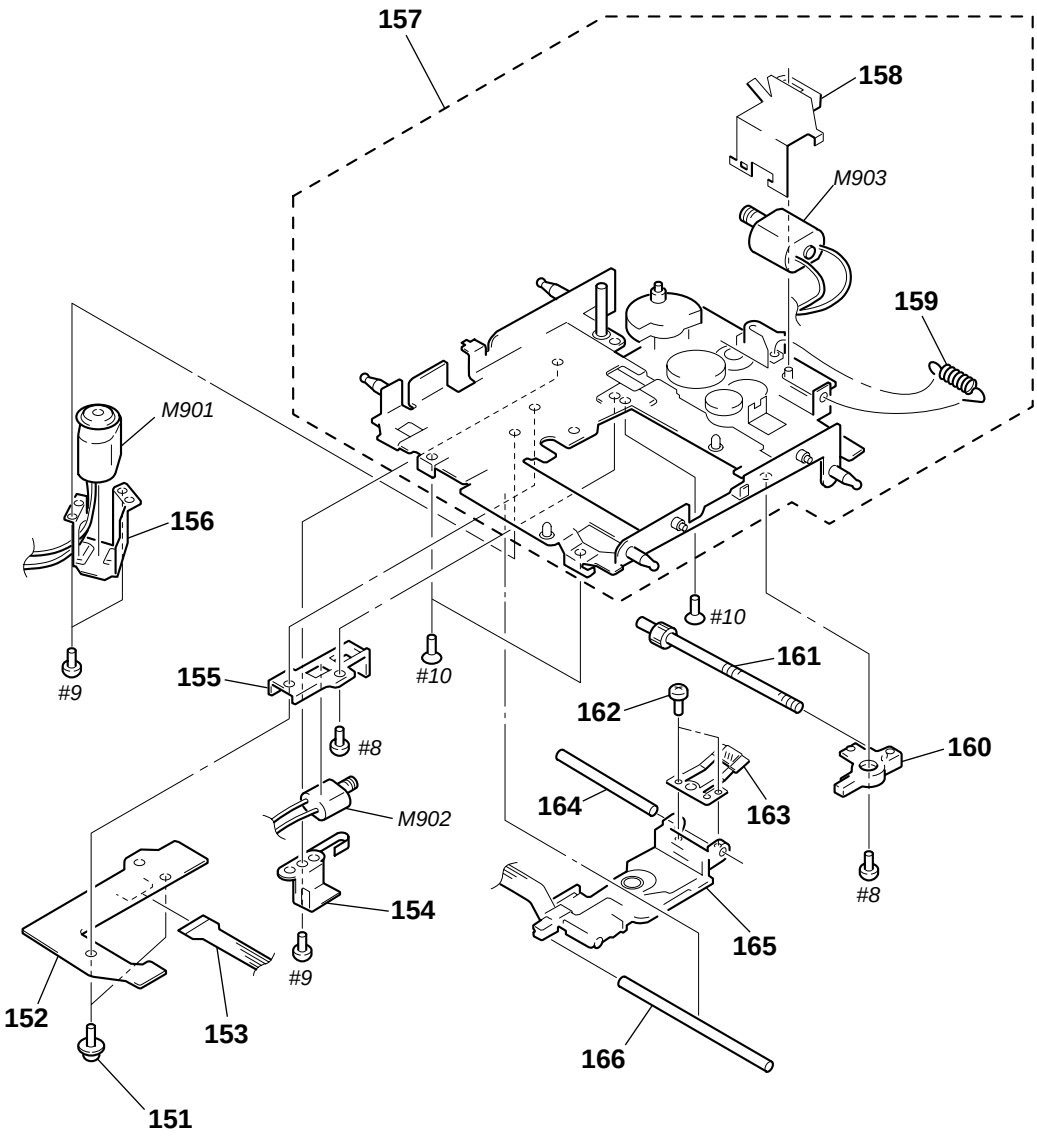
Ref. No.	Part No.	Description	Remark
60	3-041-036-01	BUTTON (1-6/M)	
61	3-041-033-01	BUTTON (LIST/ENTER)	
62	3-041-035-01	BUTTON (OFF)	
63	3-041-034-01	BUTTON (MENU/SOUND)	
* 64	3-041-175-01	PLATE (LCD), GROUND	
65	1-694-660-11	CONDUCTIVE BOARD, CONNECTION	
* 66	3-041-372-01	SHEET (REFLECTOR)	
* 67	X-3378-426-1	HOLDER (LCD) ASSY	
LCD901	1-803-907-31	DISPLAY PANEL, LIQUID CRYSTAL	

4-3. MD MECHANISM SECTION (1)
(MG-164NZ-138)



Ref. No.	Part No.	Description	Remark
* 101	A-3326-036-A	SERVO BOARD, COMPLETE	
* 102	X-3376-799-1	CHASSIS ASSY, MD	
103	3-032-714-02	SPRING (FLOAT F), TENSION	
104	3-921-111-01	SPRING (FLOAT B), TENSION	
105	3-919-273-01	DAMPER, OIL	
* 106	X-3376-796-3	HOLDER ASSY	
107	3-032-682-01	SPRING (HOLDER)	
* 108	3-034-301-01	CUSHION (EJ2)	
* 109	3-034-302-01	CUSHION (EJ3)	
* 110	3-032-712-01	LEVER (LOCK R)	
111	3-919-281-01	SPRING (CHUCKING)	
* 112	X-3376-800-1	COVER ASSY, MD	
113	3-035-932-01	WASHER, STOPPER	
* 114	X-3376-797-3	LEVER (LE) ASSY	
115	3-032-707-01	SPRING (LEVER LE)	
116	3-925-034-01	ROLLER (GEAR E)	
* 117	X-3376-798-1	ARM ASSY, CHUCKING	
* 118	3-032-711-01	LEVER (LOCK L)	

4-4. MD MECHANISM SECTION (2)
(MG-164NZ-138)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
151	2-626-617-01	SCREW (2X8)	
152	A-3326-034-A	SENSOR BOARD, COMPLETE	
153	1-654-693-11	SENSOR FLEXIBLE BOARD	
154	3-919-283-01	BRACKET (SL)	
* 155	3-032-704-01	BASE (SL)	
156	3-919-297-01	BRACKET (SP)	
157	A-3301-750-A	CHASSIS (OP) ASSY	
158	3-032-660-01	BRACKET (LO)	
159	3-032-669-01	SPRING (RACK), TENSION	
* 160	3-032-705-01	BEARING (SL)	

Ref. No.	Part No.	Description	Remark
161	X-3373-213-1	SCREW ASSY, FEED	
162	3-939-590-07	SCREW (IB LOCK)	
163	3-010-091-01	SPRING (SL FEED)	
164	3-919-293-01	SHAFT (OPT S), GUIDE	
⚠165	8-583-065-03	PICK-UP, OPTICAL KMS-241C/J1NP	
166	3-920-537-01	SHAFT (OPT L), GUIDE	
M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)	
M902	A-3291-190-A	MOTOR ASSY, SL (SLED)	
M903	A-3291-191-A	MOTOR ASSY, LO (LOADING)	

DISPLAY

SECTION 5
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  CND : Canadian model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		DISPLAY BOARD			
		**********			
	1-694-660-11	CONDUCTIVE BOARD, CONNECTION			
*	3-041-175-01	PLATE (LCD), GROUND			
*	3-041-372-01	SHEET (REFLECTOR)			
		< CAPACITOR >			
C951	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C952	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C953	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CN901	1-794-065-11	PLUG, CONNECTOR 14P			
		< DIODE >			
D902	8-719-068-68	DIODE SDZ6V2WA			
D903	8-719-422-64	DIODE MA8062-M-TX			
D905	8-719-988-61	DIODE 1SS355TE-17			
D951	8-719-420-90	DIODE MA8051-M-TX			
		< IC >			
IC901	8-759-365-90	IC LC75824W			
IC951	8-749-017-35	IC KSM-401N			
		< JUMPER RESISTOR >			
JR901	1-216-295-00	SHORT	0		
		< LIQUID CRYSTAL DISPLAY >			
LCD901	1-803-907-31	DISPLAY PANEL, LIQUID CRYSTAL			
		< DIODE >			
LED910	8-719-078-19	LED LWA673-R1S2			
LED911	8-719-078-19	LED LWA673-R1S2			
LED912	8-719-078-19	LED LWA673-R1S2			
LED913	8-719-078-19	LED LWA673-R1S2			
LED914	8-719-078-19	LED LWA673-R1S2			
LED915	8-719-078-19	LED LWA673-R1S2			
LED921	8-719-078-83	LED SML-310VT			
LED922	8-719-078-83	LED SML-310VT			
LED923	8-719-078-83	LED SML-310VT			
LED924	8-719-078-83	LED SML-310VT			

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
LSW901	1-771-883-21	SWITCH, TACTILE (WITH LED) (OFF)			
LSW902	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (SOURCE)			
LSW903	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (SOUND)			
LSW904	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (MENU)			
LSW905	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (DSPL)			
LSW906	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (LIST)			
LSW907	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (ENTER)			
LSW908	1-771-883-21	SWITCH, TACTILE (WITH LED) (MODE)			
LSW909	1-762-737-11	SWITCH, KEY BOARD (WITH LED) (D-BASS)			
LSW910	1-771-883-21	SWITCH, TACTILE (WITH LED) (6)			
LSW911	1-771-883-21	SWITCH, TACTILE (WITH LED) (5)			
LSW912	1-771-883-21	SWITCH, TACTILE (WITH LED) (4)			
LSW913	1-771-883-21	SWITCH, TACTILE (WITH LED) (3)			
LSW914	1-771-883-21	SWITCH, TACTILE (WITH LED) (2 SHUF)			
LSW915	1-771-883-21	SWITCH, TACTILE (WITH LED) (1 REP)			
		< RESISTOR >			
R901	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R902	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R903	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R904	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R905	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R906	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R907	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R908	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R909	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R910	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R911	1-208-806-11	RES-CHIP	10K	2%	1/10W
R912	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R913	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R914	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R915	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R916	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R917	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R918	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R919	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R920	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R921	1-216-029-00	METAL CHIP	150	5%	1/10W
R923	1-216-178-00	RES-CHIP	150	5%	1/8W
R925	1-216-029-00	METAL CHIP	150	5%	1/10W
R927	1-216-049-11	RES-CHIP	1K	5%	1/10W
R933	1-216-026-11	RES-CHIP	110	5%	1/10W
R936	1-216-049-11	RES-CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R938	1-216-049-11	RES-CHIP	1K	5%	1/10W
R939	1-216-049-11	RES-CHIP	1K	5%	1/10W
R951	1-216-040-00	RES-CHIP	430	5%	1/10W
R952	1-216-021-00	METAL CHIP	68	5%	1/10W
R953	1-216-049-11	RES-CHIP	1K	5%	1/10W
R954	1-216-049-11	RES-CHIP	1K	5%	1/10W
R955	1-216-049-11	RES-CHIP	1K	5%	1/10W
R956	1-216-049-11	RES-CHIP	1K	5%	1/10W
R957	1-216-107-00	METAL CHIP	270K	5%	1/10W
R958	1-216-049-11	RES-CHIP	1K	5%	1/10W
R959	1-216-049-11	RES-CHIP	1K	5%	1/10W
R960	1-216-049-11	RES-CHIP	1K	5%	1/10W
R961	1-216-121-11	RES-CHIP	1M	5%	1/10W
R970	1-216-178-00	RES-CHIP	150	5%	1/8W
R971	1-216-178-00	RES-CHIP	150	5%	1/8W
R973	1-216-178-00	RES-CHIP	150	5%	1/8W
R999	1-216-295-00	SHORT	0		
		< ROTARY ENCODER >			
RE901	1-475-014-11	ENCODER, ROTARY			
		< SWITCH >			
S901	1-771-884-21	SWITCH, TACTILE (WITH LED) (SEEK/AMS − ⏮ ◀◀)			
S902	1-771-884-21	SWITCH, TACTILE (WITH LED) (DISC/PRST +)			
S903	1-771-884-21	SWITCH, TACTILE (WITH LED) (SEEK/AMS + ▶▶ ⏭)			
S904	1-771-884-21	SWITCH, TACTILE (WITH LED) (DISC/PRST −)			
**********					
*	A-3294-806-A	MAIN BOARD, COMPLETE (US,CND)			
*	A-3294-873-A	MAIN BOARD, COMPLETE (E)			
		**********			
*	3-019-565-01	BRACKET (IC)			
*	3-041-157-01	HEAT SINK (6P)			
*	3-041-174-01	HEAT SINK (REG)			
*	3-041-261-01	BRACKET (TR)			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
	7-685-795-09	SCREW +PTT 2.6X12 (S)			
		< CAPACITOR >			
C101	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C103	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C104	1-164-346-11	CERAMIC CHIP	1uF		16V
C110	1-124-233-11	ELECT	10uF	20%	16V
C111	1-124-233-11	ELECT	10uF	20%	16V
C112	1-164-346-11	CERAMIC CHIP	1uF		16V
C123	1-164-346-11	CERAMIC CHIP	1uF		16V
C124	1-164-346-11	CERAMIC CHIP	1uF		16V
C125	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C126	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C201	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remark
C202	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C203	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C204	1-164-346-11	CERAMIC CHIP	1uF		16V
C210	1-124-233-11	ELECT	10uF	20%	16V
C211	1-124-233-11	ELECT	10uF	20%	16V
C212	1-164-346-11	CERAMIC CHIP	1uF		16V
C223	1-164-346-11	CERAMIC CHIP	1uF		16V
C224	1-164-346-11	CERAMIC CHIP	1uF		16V
C225	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C226	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C403	1-119-774-11	ELECT	100uF	20%	16V
C404	1-124-233-11	ELECT	10uF	20%	16V
C405	1-124-233-11	ELECT	10uF	20%	16V
C415	1-124-259-11	ELECT	4.7uF	20%	16V
C426	1-164-346-11	CERAMIC CHIP	1uF		16V
C427	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C428	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C429	1-164-346-11	CERAMIC CHIP	1uF		16V
C431	1-135-473-11	ELECT	3300uF	20%	16V
C435	1-126-786-11	ELECT	47uF	20%	16V
C601	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C603	1-124-443-00	ELECT	100uF	20%	10V
C604	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C605	1-124-233-11	ELECT	10uF	20%	16V
C607	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C609	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C610	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C614	1-162-306-11	CERAMIC CHIP	0.01uF	30%	16V
C703	1-124-465-11	ELECT	0.47uF	20%	50V
C704	1-128-057-11	ELECT	330uF	20%	6.3V
C705	1-164-346-11	CERAMIC CHIP	1uF		16V
C706	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C707	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C708	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C709	1-126-176-11	ELECT	220uF	20%	10V
C713	1-164-346-11	CERAMIC CHIP	1uF		16V
C714	1-124-584-00	ELECT	100uF	20%	10V
C719	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C720	1-164-346-11	CERAMIC CHIP	1uF		16V
C721	1-164-346-11	CERAMIC CHIP	1uF		16V
C722	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C723	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C801	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C802	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C803	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C804	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C805	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C806	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C807	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C808	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C809	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C810	1-163-133-00	CERAMIC CHIP	470PF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C811	1-163-259-11	CERAMIC CHIP	220PF	5%	50V
C812	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C813	1-164-346-11	CERAMIC CHIP	1uF		16V
C814	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C888	1-124-119-11	ELECT	330uF	20%	16V
C904	1-124-584-00	ELECT	100uF	20%	10V
C905	1-124-233-11	ELECT	10uF	20%	16V
C906	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C907	1-124-465-00	ELECT	0.47uF	20%	50V
C908	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C910	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C913	1-126-960-11	ELECT	1uF	20%	50V
C914	1-128-647-11	DOUBLE LAYERS	0.1F		5.5V
C920	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C921	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C922	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< CONNECTOR >			
CN701	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P			
CNP501	1-774-701-11	PIN, CONNECTOR 16P			
CNP800	1-770-520-31	CONNECTOR, FFC/FPC 12P			
CNP801	1-580-907-21	PLUG, CONNECTOR (BUS CONTROL IN)			
		< JACK >			
CNJ600	1-793-598-11	JACK (ANTENNA)			
CNP802	1-764-270-21	JACK (REMOTE IN)			
		< DIODE >			
D401	8-719-988-61	DIODE	1SS355TE-17		
D402	8-719-991-33	DIODE	1SS133T-77		
D404	8-719-422-16	DIODE	MA8039-L-TX		
D405	8-719-988-61	DIODE	1SS355TE-17		
D601	8-719-921-44	DIODE	MTZJ-T-77-5.1C		
D603	8-719-988-61	DIODE	1SS355TE-17		
D701	8-719-109-98	DIODE	MTZJ-T-77-5.6C		
D702	8-719-058-24	DIODE	RB501V-40TE-17		
D801	8-719-991-33	DIODE	1SS133T-77		
D802	8-719-991-33	DIODE	1SS133T-77		
D803	8-719-058-24	DIODE	RB501V-40TE-17		
D806	8-719-017-94	DIODE	MA8180-TX		
D807	8-719-109-97	DIODE	MTZJ-T-77-6.8B		
D808	8-719-991-33	DIODE	1SS133T-77		
D809	8-719-017-94	DIODE	MA8180-TX		
D810	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D811	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D812	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D813	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D814	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D815	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D816	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D817	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D818	8-719-109-93	DIODE	MTZJ-T-77-6.2B		
D820	8-719-988-61	DIODE	1SS355TE-17		

Ref. No.	Part No.	Description			Remark
D821	8-719-988-61	DIODE	1SS355TE-17		
D822	8-719-977-12	DIODE	MA8068-M-TX		
D823	8-719-977-12	DIODE	MA8068-M-TX		
D901	8-719-200-82	DIODE	11ES2-TA1B		
D902	8-719-200-82	DIODE	11ES2-TA1B		
D903	8-719-049-38	DIODE	1N5404TU		
D904	8-719-991-33	DIODE	1SS133T-77		
D905	8-719-109-97	DIODE	MTZJ-T-77-6.8B		
D906	8-719-929-15	DIODE	MTZJ-T-77-9.1B		
D907	8-719-200-82	DIODE	11ES2-TA1B		
D909	8-719-991-33	DIODE	1SS133T-77		
D910	8-719-923-93	DIODE	MTZJ-T-77-16C		
D911	8-719-022-90	DIODE	MA8160-M-TX		
D913	8-719-988-61	DIODE	1SS355TE-17		
D914	8-719-977-12	DIODE	MA8068-M-TX		
D915	8-719-914-44	DIODE	DAP202K-T-146		
D917	8-719-991-33	DIODE	1SS133T-77		
D918	8-719-929-15	DIODE	MTZJ-T-77-9.1B		
D921	8-719-079-42	DIODE	1ZB22(TPA3)		
D922	8-719-079-42	DIODE	1ZB22(TPA3)		
D923	8-719-079-42	DIODE	1ZB22(TPA3)		
D924	8-719-079-42	DIODE	1ZB22(TPA3)		
D925	8-719-079-42	DIODE	1ZB22(TPA3)		
D926	8-719-079-42	DIODE	1ZB22(TPA3)		
D927	8-719-079-42	DIODE	1ZB22(TPA3)		
D928	8-719-079-42	DIODE	1ZB22(TPA3)		
D930	8-719-977-12	DIODE	MA8068-M-TX		
		< IC >			
IC101	8-759-663-88	IC	TA8268H		
IC701	8-759-653-27	IC	TDA7402TR		
IC801	8-759-664-64	IC	MN101C49KTB		
IC802	8-759-449-89	IC	BA8270F-E2		
IC901	8-759-572-12	IC	BA4903ST-V5		
IC902	8-759-574-61	IC	XC61AN4302MR		
		< JUMPER RESISTOR >			
JR101	1-216-295-00	SHORT	0		
JR102	1-216-295-00	SHORT	0		
JR110	1-216-296-00	SHORT	0		
JR111	1-216-296-00	SHORT	0		
JR201	1-216-295-00	SHORT	0		
JR202	1-216-295-00	SHORT	0		
JR222	1-216-296-00	SHORT	0		
JR223	1-216-296-00	SHORT	0		
JR401	1-216-296-00	SHORT	0		
JR402	1-216-295-00	SHORT	0		
JR602	1-216-295-00	SHORT	0		
JR603	1-216-295-00	SHORT	0		
JR701	1-216-296-00	SHORT	0		
JR702	1-216-295-00	SHORT	0		
JR703	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
JR705	1-216-295-00	SHORT	0		
JR707	1-216-295-00	SHORT	0		
JR709	1-216-295-00	SHORT	0		
JR711	1-216-295-00	SHORT	0		
JR712	1-216-296-00	SHORT	0		
JR801	1-216-295-00	SHORT	0		
JR803	1-216-296-00	SHORT	0		
JR805	1-216-295-00	SHORT	0		
JR807	1-216-296-00	SHORT	0		
JR810	1-216-296-00	SHORT	0		
JR812	1-216-296-00	SHORT	0		
JR813	1-216-295-00	SHORT	0		
JR816	1-216-296-00	SHORT	0		
JR817	1-216-296-00	SHORT	0		
JR888	1-216-296-00	SHORT	0		
JR901	1-216-296-00	SHORT	0		
JR902	1-216-296-00	SHORT	0		
JR911	1-216-296-00	SHORT	0		
JR914	1-216-295-00	SHORT	0		
JR916	1-216-296-00	SHORT	0		
JR917	1-216-296-00	SHORT	0		
JR920	1-216-296-00	SHORT	0		
JR922	1-216-198-00	RES-CHIP	1K	5%	1/8W
JR923	1-216-295-00	SHORT	0		
JR924	1-216-295-00	SHORT	0		
		< COIL >			
L901	1-419-476-31	COIL, CHOKE	250uH		
		< JACK >			
PJ400	1-794-068-11	JACK, PIN 6P (AUDIO OUT FRONT, AUDIO OUT REAR,BUS AUDIO IN)			
		< TRANSISTOR >			
Q101	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q102	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q201	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q202	8-729-920-31	TRANSISTOR	DTC343TK-T-146		
Q401	8-729-038-55	TRANSISTOR	KRA103S		
Q402	8-729-038-68	TRANSISTOR	KRC103S		
Q601	8-729-049-40	TRANSISTOR	STC2412G		
Q602	8-729-049-43	TRANSISTOR	STB1132Y		
Q603	8-729-038-68	TRANSISTOR	KRC103S		
Q701	8-729-038-55	TRANSISTOR	KRA103S		
Q702	8-729-038-68	TRANSISTOR	KRC103S		
Q703	8-729-015-11	TRANSISTOR	2SD1802FAST-TL		
Q801	8-729-038-55	TRANSISTOR	KRA103S		
Q802	8-729-038-55	TRANSISTOR	KRA103S		
Q803	8-729-049-40	TRANSISTOR	STC2412G		
Q902	8-729-038-68	TRANSISTOR	KRC103S		
Q903	8-729-038-55	TRANSISTOR	KRA103S		
Q904	8-729-019-00	TRANSISTOR	2SD2394-G		
Q905	8-729-049-40	TRANSISTOR	STC2412G		
Q906	8-729-049-40	TRANSISTOR	STC2412G		
Q907	8-729-038-55	TRANSISTOR	KRA103S		
Q908	8-729-038-68	TRANSISTOR	KRC103S		
Q911	8-729-038-68	TRANSISTOR	KRC103S		
Q912	8-729-049-43	TRANSISTOR	STB1132Y		
Q913	8-729-038-68	TRANSISTOR	KRC103S		
Q914	8-729-038-55	TRANSISTOR	KRA103S		
Q915	8-729-038-55	TRANSISTOR	KRA103S		
Q916	8-729-049-40	TRANSISTOR	STC2412G		
Q919	8-729-038-68	TRANSISTOR	KRC103S		
Q920	8-729-019-00	TRANSISTOR	2SD2394-G		
Q921	8-729-049-43	TRANSISTOR	STB1132Y		
Q922	8-729-019-00	TRANSISTOR	2SD2394-G		
		< RESISTOR >			
R101	1-216-064-00	METAL CHIP	4.3K	5%	1/10W
R102	1-216-089-11	RES-CHIP	47K	5%	1/10W
R103	1-216-089-11	RES-CHIP	47K	5%	1/10W
R104	1-216-089-11	RES-CHIP	47K	5%	1/10W
R112	1-216-025-11	RES-CHIP	100	5%	1/10W
R114	1-216-174-00	RES-CHIP	100	5%	1/8W
R115	1-216-077-00	METAL CHIP	15K	5%	1/10W
R116	1-216-226-00	RES-CHIP	15K	5%	1/8W
R117	1-216-025-11	RES-CHIP	100	5%	1/10W
R118	1-216-025-11	RES-CHIP	100	5%	1/10W
R123	1-216-089-11	RES-CHIP	47K	5%	1/10W
R124	1-216-089-11	RES-CHIP	47K	5%	1/10W
R201	1-216-064-00	METAL CHIP	4.3K	5%	1/10W
R202	1-216-089-11	RES-CHIP	47K	5%	1/10W
R203	1-216-089-11	RES-CHIP	47K	5%	1/10W
R204	1-216-089-11	RES-CHIP	47K	5%	1/10W
R212	1-216-174-00	RES-CHIP	100	5%	1/8W
R214	1-216-174-00	RES-CHIP	100	5%	1/8W
R215	1-216-077-00	METAL CHIP	15K	5%	1/10W
R216	1-216-077-00	METAL CHIP	15K	5%	1/10W
R217	1-216-025-11	RES-CHIP	100	5%	1/10W
R218	1-216-025-11	RES-CHIP	100	5%	1/10W
R223	1-216-089-11	RES-CHIP	47K	5%	1/10W
R224	1-216-089-11	RES-CHIP	47K	5%	1/10W
R402	1-247-879-11	CARBON	100K	5%	1/4W
R405	1-216-049-11	RES-CHIP	1K	5%	1/10W
R406	1-216-065-11	RES-CHIP	4.7K	5%	1/10W
R408	1-216-049-11	RES-CHIP	1K	5%	1/10W
R409	1-216-222-00	RES-CHIP	10K	5%	1/8W
R410	1-216-097-11	RES-CHIP	100K	5%	1/10W
R411	1-216-121-00	METAL CHIP	1M	5%	1/10W
R601	1-216-025-11	RES-CHIP	100	5%	1/10W
R602	1-216-025-11	RES-CHIP	100	5%	1/10W
R603	1-216-295-00	SHORT	0		
R604	1-216-295-00	SHORT	0		
R605	1-216-049-11	RES-CHIP	1K	5%	1/10W
R606	1-216-058-00	RES-CHIP	2.4K	5%	1/10W
R607	1-216-097-11	RES-CHIP	100K	5%	1/10W

MAIN RELAY

Ref. No.	Part No.	Description			Remark
R701	1-216-089-11	RES-CHIP	47K	5%	1/10W
R703	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
R704	1-216-295-00	SHORT	0		
R707	1-216-041-00	METAL CHIP	470	5%	1/10W
R710	1-216-089-11	RES-CHIP	47K	5%	1/10W
R711	1-216-085-00	METAL CHIP	33K	5%	1/10W
R712	1-216-174-00	RES-CHIP	100	5%	1/8W
R713	1-216-174-00	RES-CHIP	100	5%	1/8W
R714	1-216-296-00	SHORT	0		
R801	1-208-806-11	RES-CHIP	10K	2%	1/10W
R802	1-208-806-11	RES-CHIP	10K	2%	1/10W
R803	1-216-105-11	RES-CHIP	220K	5%	1/10W
R804	1-216-105-11	RES-CHIP	220K	5%	1/10W
R805	1-216-246-00	RES-CHIP	100K	5%	1/8W
R806	1-216-097-11	RES-CHIP	100K	5%	1/10W
R807	1-249-417-11	CARBON	1K	5%	1/4W
R808	1-249-417-11	CARBON	1K	5%	1/4W
R812	1-216-097-11	RES-CHIP	100K	5%	1/10W
R813	1-247-863-11	CARBON	22K	5%	1/4W
R814	1-216-081-00	METAL CHIP	22K	5%	1/10W
R815	1-249-417-11	CARBON	1K	5%	1/4W
R816	1-216-025-11	RES-CHIP	100	5%	1/10W
R818	1-216-049-11	RES-CHIP	1K	5%	1/10W
R819	1-216-049-11	RES-CHIP	1K	5%	1/10W
R820	1-216-049-11	RES-CHIP	1K	5%	1/10W
R821	1-216-069-11	METAL CHIP	6.8K	5%	1/10W
R822	1-216-081-00	METAL CHIP	22K	5%	1/10W
R823	1-216-025-11	RES-CHIP	100	5%	1/10W
R824	1-216-097-11	RES-CHIP	100K	5%	1/10W
R825	1-249-429-11	CARBON	10K	5%	1/4W
R826	1-216-025-11	RES-CHIP	100	5%	1/10W
R827	1-216-025-11	RES-CHIP	100	5%	1/10W
R828	1-216-073-00	METAL CHIP	10K	5%	1/10W
R829	1-247-807-11	CARBON	100	5%	1/4W
R830	1-247-807-11	CARBON	100	5%	1/4W
R831	1-216-073-00	METAL CHIP	10K	5%	1/10W
R832	1-216-073-00	METAL CHIP	10K	5%	1/10W
R833	1-216-049-11	RES-CHIP	1K	5%	1/10W
R834	1-216-049-11	RES-CHIP	1K	5%	1/10W
R837	1-216-049-11	RES-CHIP	1K	5%	1/10W
R838	1-216-049-11	RES-CHIP	1K	5%	1/10W
R839	1-216-025-11	RES-CHIP	100	5%	1/10W
R840	1-216-025-11	RES-CHIP	100	5%	1/10W
R841	1-216-049-11	RES-CHIP	1K	5%	1/10W
R843	1-216-295-00	SHORT	0		(US,E)
R844	1-216-025-11	RES-CHIP	100	5%	1/10W
R845	1-216-097-11	RES-CHIP	100K	5%	1/10W (E)
R846	1-216-089-11	RES-CHIP	47K	5%	1/10W (E)
R847	1-216-097-11	RES-CHIP	100K	5%	1/10W
R852	1-216-295-00	SHORT	0		
R854	1-216-295-00	SHORT	0		

Ref. No.	Part No.	Description			Remark
R855	1-216-019-00	RES-CHIP	56	5%	1/10W
R888	1-216-089-11	RES-CHIP	47K	5%	1/10W
R901	1-216-246-00	RES-CHIP	100K	5%	1/8W
R902	1-216-049-11	RES-CHIP	1K	5%	1/10W
R903	1-216-027-00	METAL CHIP	120	5%	1/10W
R904	1-216-085-00	METAL CHIP	33K	5%	1/10W
R905	1-216-025-11	RES-CHIP	100	5%	1/10W
R907	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R909	1-216-044-00	METAL CHIP	620	5%	1/10W
R910	1-216-097-11	RES-CHIP	100K	5%	1/10W
R912	1-216-097-11	RES-CHIP	100K	5%	1/10W
R914	1-216-089-11	RES-CHIP	47K	5%	1/10W
R915	1-216-079-00	METAL CHIP	18K	5%	1/10W
R917	1-216-105-11	RES-CHIP	220K	5%	1/10W
R918	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
R920	1-216-097-11	RES-CHIP	100K	5%	1/10W
R925	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R926	1-216-097-11	RES-CHIP	100K	5%	1/10W
R928	1-216-043-11	RES-CHIP	560	5%	1/10W
R929	1-216-043-11	RES-CHIP	560	5%	1/10W
R930	1-216-097-11	RES-CHIP	100K	5%	1/10W
R931	1-216-073-00	METAL CHIP	10K	5%	1/10W
R933	1-216-083-00	METAL CHIP	27K	5%	1/10W
R934	1-247-810-11	CARBON	130	5%	1/4W
R935	1-247-810-11	CARBON	130	5%	1/4W
R936	1-247-810-11	CARBON	130	5%	1/4W
R937	1-247-810-11	CARBON	130	5%	1/4W
R938	1-247-810-11	CARBON	130	5%	1/4W
R939	1-247-810-11	CARBON	130	5%	1/4W
R940	1-216-138-00	RES-CHIP	3.3	5%	1/8W

< SWITCH >

S900	1-762-638-11	SWITCH, TACTILE (RESET)
S901	1-771-540-11	SWITCH, PUSH (1 KEY) (NOSE DET)
SW802	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT) (E)

< THERMISTOR (POSITIVE) >

TH801	1-801-792-21	THERMISTOR, POSITIVE

< TUNER >

TU601	A-3220-738-A	TUNER UNIT (TUX-020)

< VIBRATOR >

X800	1-781-822-11	VIBRATOR, CERAMIC (18.432MHz)
X801	1-567-098-41	VIBRATOR, CRYSTAL (32kHz)

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*	1-676-691-11	RELAY BOARD

****

< CONNECTOR >

CNP902	1-794-064-11	SOCKET, CONNECTOR 14P
CNP903	1-792-173-11	CABLE, FLAT (FFC) 12P

Ref. No.	Part No.	Description			Remark
		< DIODE >			
LED905	8-719-033-14	LED CL-170PG-CD-T (MD WINDOW)			
LED906	8-719-033-14	LED CL-170PG-CD-T (MD WINDOW)			
		< SWITCH >			
LSW916	1-771-609-11	SWITCH, TACTILE (WITH LED) (⏏)			
		< RESISTOR >			
R930	1-216-033-00	METAL CHIP	220	5%	1/10W
**********					
	A-3326-034-A	SENSOR BOARD, COMPLETE When replacing any parts in the SENSOR board, the whole mounted board should be replaced. **********			
**********					
*	A-3326-036-A	SERVO BOARD, COMPLETE **********			
		< CAPACITOR >			
C11	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C101	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C102	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C104	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C105	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C106	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C201	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C202	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C301	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C302	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C305	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C306	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C307	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C308	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C309	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C310	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C311	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C314	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C315	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C316	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C317	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C318	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C319	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C320	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C321	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C322	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remark
C324	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C325	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C326	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C327	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C328	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C329	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C331	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C333	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C334	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C335	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C337	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C338	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C339	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C340	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C341	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C342	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C343	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C344	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C345	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C346	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C347	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C348	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C349	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C350	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C351	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C352	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C353	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C356	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C357	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C358	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C359	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C361	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C362	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C402	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C403	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C501	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C504	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C505	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C506	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C510	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C512	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C513	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C514	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C515	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C516	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN101	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P			
CN102	1-573-929-21	CONNECTOR, FFC/FPC (ZIF) 20P			

SERVO

Ref. No.	Part No.	Description	Remark
CN103	1-764-439-21	CONNECTOR, FPC 11P	
		< DIODE >	
D401	8-719-157-93	DIODE DTZ-TT11-3.0B	
D501	8-719-988-61	DIODE 1SS355TE-17	
		< FERRITE BEAD >	
FB301	1-414-235-22	FERRITE BEAD INDUCTOR	
FB302	1-414-760-21	FERRITE BEAD INDUCTOR	
		< IC >	
IC101	8-759-571-84	IC PCM1718E/2K	
IC301	8-752-384-47	IC CXD2652AR	
IC302	8-752-080-95	IC CXA2523AR	
IC303	8-759-430-25	IC BH6511FS-E2	
IC304	8-759-096-87	IC TC7WU04FU(TE12R)	
IC305	8-759-040-83	IC BA6287F-T1	
IC306	8-759-058-62	IC TC7S08FU(TE85R)	
IC307	8-759-368-16	IC MN41V4400TT-08S	
IC401	8-759-909-71	IC BA4558F-E2	
IC501	8-752-909-21	IC CXP84340-217Q	
IC502	8-759-238-47	IC TC74HCT7007AF(EL)	
IC503	8-759-238-47	IC TC74HCT7007AF(EL)	
		< COIL >	
L101	1-412-058-11	INDUCTOR CHIP 10uH	
L102	1-412-058-11	INDUCTOR CHIP 10uH	
L301	1-412-058-11	INDUCTOR CHIP 10uH	
L302	1-412-058-11	INDUCTOR CHIP 10uH	
L303	1-412-039-51	INDUCTOR CHIP 100uH	
L304	1-412-039-51	INDUCTOR CHIP 100uH	
L305	1-412-039-51	INDUCTOR CHIP 100uH	
L306	1-412-039-51	INDUCTOR CHIP 100uH	
L501	1-412-058-11	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q301	8-729-230-49	TRANSISTOR 2SC2712Y-TE85L	
Q302	8-729-026-49	TRANSISTOR 2SA1037AK-T146-QR	
Q401	8-729-920-85	TRANSISTOR 2SD1664-T101-QR	
Q402	8-729-106-60	TRANSISTOR 2SB1132-T101-QR	
Q403	8-729-421-22	TRANSISTOR UN2211-TX	
		< RESISTOR >	
R101	1-216-073-00	METAL CHIP 10K 5%	1/10W
R102	1-216-833-11	RES-CHIP 10K 5%	1/16W
R104	1-216-049-11	RES-CHIP 1K 5%	1/10W
R201	1-216-073-00	METAL CHIP 10K 5%	1/10W
R202	1-216-049-11	RES-CHIP 1K 5%	1/10W
R301	1-216-809-11	METAL CHIP 100 5%	1/16W
R302	1-216-809-11	METAL CHIP 100 5%	1/16W
R303	1-216-809-11	METAL CHIP 100 5%	1/16W
R304	1-216-809-11	METAL CHIP 100 5%	1/16W
R305	1-216-809-11	METAL CHIP 100 5%	1/16W

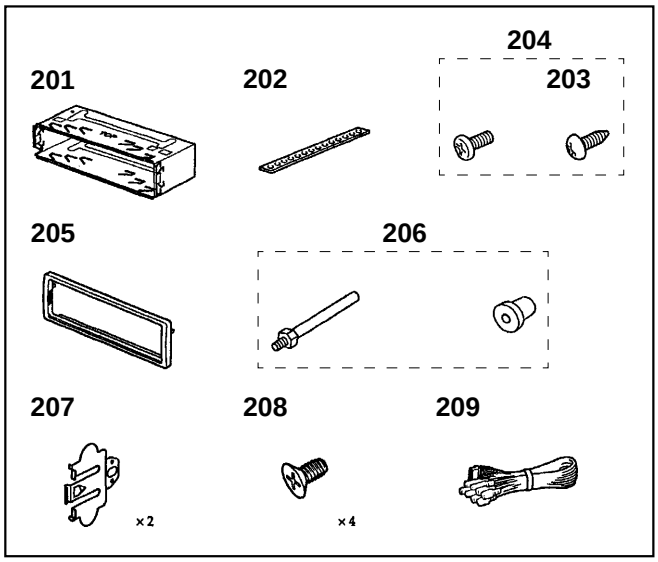
Ref. No.	Part No.	Description			Remark
R306	1-216-809-11	METAL CHIP	100	5%	1/16W
R307	1-216-809-11	METAL CHIP	100	5%	1/16W
R308	1-216-809-11	METAL CHIP	100	5%	1/16W
R311	1-216-821-11	METAL CHIP	1K	5%	1/16W
R312	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R316	1-216-821-11	METAL CHIP	1K	5%	1/16W
R317	1-216-809-11	METAL CHIP	100	5%	1/16W
R318	1-216-833-11	RES-CHIP	10K	5%	1/16W
R319	1-216-845-11	METAL CHIP	100K	5%	1/16W
R320	1-216-855-11	METAL CHIP	680K	5%	1/16W
R324	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R325	1-216-821-11	METAL CHIP	1K	5%	1/16W
R327	1-216-821-11	METAL CHIP	1K	5%	1/16W
R328	1-216-811-11	METAL CHIP	150	5%	1/16W
R329	1-216-819-11	METAL CHIP	680	5%	1/16W
R330	1-216-853-11	METAL CHIP	470K	5%	1/16W
R331	1-216-809-11	METAL CHIP	100	5%	1/16W
R332	1-216-809-11	METAL CHIP	100	5%	1/16W
R333	1-216-819-11	METAL CHIP	680	5%	1/16W
R334	1-216-809-11	METAL CHIP	100	5%	1/16W
R335	1-216-815-11	METAL CHIP	330	5%	1/16W
R336	1-216-853-11	METAL CHIP	470K	5%	1/16W
R337	1-216-853-11	METAL CHIP	470K	5%	1/16W
R338	1-216-833-11	RES-CHIP	10K	5%	1/16W
R339	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R340	1-216-843-11	METAL CHIP	68K	5%	1/16W
R341	1-216-837-11	METAL CHIP	22K	5%	1/16W
R342	1-216-833-11	RES-CHIP	10K	5%	1/16W
R343	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R344	1-216-833-11	RES-CHIP	10K	5%	1/16W
R345	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R346	1-216-841-11	METAL CHIP	47K	5%	1/16W
R347	1-216-833-11	RES-CHIP	10K	5%	1/16W
R348	1-218-708-11	METAL CHIP	4.7K	0.5%	1/16W
R349	1-216-025-11	RES-CHIP	100	5%	1/10W
R350	1-216-142-00	RES-CHIP	4.7	5%	1/8W
R351	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R352	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R353	1-218-700-11	METAL CHIP	2.2K	0.5%	1/16W
R354	1-216-857-11	METAL CHIP	1M	5%	1/16W
R355	1-216-833-11	RES-CHIP	10K	5%	1/16W
R356	1-216-833-11	RES-CHIP	10K	5%	1/16W
R357	1-216-017-11	RES-CHIP	47	5%	1/10W
R359	1-216-864-11	METAL CHIP	0	5%	1/16W
R401	1-216-073-00	METAL CHIP	10K	5%	1/10W
R402	1-216-065-11	RES-CHIP	4.7K	5%	1/10W
R403	1-216-065-11	RES-CHIP	4.7K	5%	1/10W
R404	1-216-809-11	METAL CHIP	100	5%	1/16W
R405	1-218-692-11	METAL CHIP	1K	0.5%	1/16W
R406	1-218-714-11	METAL CHIP	8.2K	0.5%	1/16W
R501	1-216-821-11	METAL CHIP	1K	5%	1/16W
R502	1-216-821-11	METAL CHIP	1K	5%	1/16W
R503	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R504	1-216-821-11	METAL CHIP	1K	5%	1/16W
R505	1-216-821-11	METAL CHIP	1K	5%	1/16W
R506	1-216-845-11	METAL CHIP	100K	5%	1/16W
R507	1-218-708-11	METAL CHIP	4.7K	0.5%	1/16W
R510	1-216-845-11	METAL CHIP	100K	5%	1/16W
R511	1-216-847-11	METAL CHIP	150K	5%	1/16W
R512	1-216-845-11	METAL CHIP	100K	5%	1/16W
R516	1-216-809-11	METAL CHIP	100	5%	1/16W
R517	1-216-809-11	METAL CHIP	100	5%	1/16W
R518	1-216-809-11	METAL CHIP	100	5%	1/16W
R519	1-216-809-11	METAL CHIP	100	5%	1/16W
R520	1-216-809-11	METAL CHIP	100	5%	1/16W
R521	1-216-809-11	METAL CHIP	100	5%	1/16W
R522	1-216-821-11	METAL CHIP	1K	5%	1/16W
R523	1-216-821-11	METAL CHIP	1K	5%	1/16W
R524	1-216-821-11	METAL CHIP	1K	5%	1/16W
R525	1-216-845-11	METAL CHIP	100K	5%	1/16W
R526	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R527	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R528	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R529	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R530	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R531	1-216-845-11	METAL CHIP	100K	5%	1/16W
R532	1-216-864-11	METAL CHIP	0	5%	1/16W
R533	1-216-845-11	METAL CHIP	100K	5%	1/16W
R534	1-216-845-11	METAL CHIP	100K	5%	1/16W
R535	1-216-845-11	METAL CHIP	100K	5%	1/16W
R536	1-216-864-11	METAL CHIP	0	5%	1/16W
R537	1-216-809-11	METAL CHIP	100	5%	1/16W
R538	1-216-845-11	METAL CHIP	100K	5%	1/16W
R539	1-216-845-11	METAL CHIP	100K	5%	1/16W
R540	1-216-845-11	METAL CHIP	100K	5%	1/16W
R542	1-216-845-11	METAL CHIP	100K	5%	1/16W
		< NETWORK RESISTOR >			
RB301	1-233-576-11	RES, CHIP NETWORK	100		
RB302	1-233-576-11	RES, CHIP NETWORK	100		
RB503	1-233-412-11	RES, CHIP NETWORK	1.0K (3216)		
		< THERMISTOR >			
TH501	1-810-421-11	THERMISTOR	NTH5G36B103K01TE		
		< VIBRATOR >			
X301	1-767-429-21	VIBRATOR, CRYSTAL (22MHz)			
X501	1-760-365-11	VIBRATOR, CERAMIC (10MHz)			

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
9	1-792-194-21	CORD (WITH CONNECTOR) (POWER)	
153	1-654-693-11	SENSOR FLEXIBLE BOARD	
⚠165	8-583-065-03	PICK-UP, OPTICAL KMS-241C/J1NP	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)	
M902	A-3291-190-A	MOTOR ASSY, SL (SLED)	
M903	A-3291-191-A	MOTOR ASSY, LO (LOADING)	
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-043-384-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (US,CND)	
	3-043-387-11	MANUAL, INSTRUCTION (ENGLISH) (US,CND)	
	3-043-387-21	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-044-892-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,TRADITIONAL CHINESE) (E)	
	3-044-893-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH, TRADITIONAL CHINESE) (E)	
	X-3378-390-1	CASE ASSY (for FRONT PANEL)	
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-793-09	SCREW +PTT 2.6X8 (S)	
#2	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#3	7-685-795-09	SCREW +PTT 2.6X12 (S)	
#4	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	
#5	7-621-772-20	SCREW +B 2X5	
#6	7-624-102-04	STOP RING 1.5, TYPE -E	
#7	7-685-851-04	SCREW +BVTT 2X4 (S)	
#8	7-621-772-08	SCREW +B 2X3	
#9	7-627-852-37	SCREW, PRECISION +P 1.7X1.8 TYPE3	
#10	7-621-555-10	SCREW +K 2X3	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
201	3-014-370-21	FRAME, FITTING	
202	3-916-012-01	BRACKET (ND), FITTING ASSIST (US,CND)	
203	7-682-160-01	SCREW +P 4X6 (US,CND)	
204	X-3368-725-1	SCREW ASSY, FITTING (US,CND)	
205	3-041-027-01	COLLAR	
206	X-3366-405-1	SCREW ASSY (EXP), FITTING (E)	
207	3-030-929-02	SPRING, FITTING	
208	3-934-325-01	SCREW (+K 5X8 TP)	
209	1-792-194-21	CORD (WITH CONNECTOR) (POWER)	



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Mobile Electronics Division Company

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